

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 85.

NEW YORK, SATURDAY, OCTOBER 22, 1904.

No. 17.

ORIGINAL ARTICLES.

THE SURGICAL PHYSIOLOGY OF THE LYMPHATIC SYSTEM.

BY C. H. MAYO, M.D.,

OF ROCHESTER, MINN.;

SURGEON TO ST. MARY'S HOSPITAL.

A STUDY of the lymphatic system readily explains many physiological as well as pathological processes. The great part played by the absorbents in maintaining the nutrition, repair and defense of the system has apparently received but little attention as compared with its importance. That the greater part of the absorption of the body, excepting the intestinal, is accomplished by the lymphatics, is well understood; but their direct relation to surgery seems to have been but occasionally appreciated.

The lymph system, consisting of vessels, channels, spaces and glands, accompanies the arterial system, but varies greatly in extent and character, according to location. These vessels drain certain definite areas, and when diseased by infection, it is usually possible to locate the point of its entrance. The lymphatic is a closed system, having capillaries ending in connective tissue spaces, and the vessel walls, while resembling veins, are exceedingly thin. When we consider that all the tissues of the body are more or less bathed with lymph, a fluid derived from and almost similar to the blood plasma, we would expect to find, as is the case, that tissues will be supplied with lymph and absorbents in direct proportion to their exposure and necessity for repair, as well as to their activity.

Interspersed in the course of the lymph vessels are found groups of glands. These organs vary from the size of a pin head to that of a large bean, and serve from their structure to act as filters to all the fluid passed through them. The glands are filled with nests of the forming leucocytes, and all the lymph is exposed to the probable purifying action of these cells. Here it is that the great bulk of bacteria is checked in infection, and through the action of the leucocytes or some unknown physiological chemistry only the toxins and a limited number of bacteria are permitted to pass to the venous system. It is here that the cancer cell is checked and later overpowers the gland and develops in its outer layers; so one gland after another takes up the work of protection by preventing the waste cells, the products of metabolism, of nutrition, repair or infection, from entering the blood unchanged. Leucocytosis then, to a great extent, will depend largely upon the region involved in inflammation as well as the intervening gland and lymph area between it and the circulation.

An enlarged gland is then an evidence of a local struggle or of a defeat, and it is this type of gland tumor usually considered in surgery. The great number of battles won are an unknown condition; therefore, there is the less appreciation of their work. Manfrid, in an examination of 88 animals and three men who had died of non-infectious diseases, found infected glands in 78 of the animals and all of the men. The glands grouped in the neck in large numbers, as about the mouth, nose and trachea are so many possible points for the invasion of bacteria. Other glandular aggregations are placed on the flexor and vessel side of the union of the extremities with the body, while the interior of the thorax and abdomen is freely supplied with such organs of chemistry and defense. It is claimed that the glands are capable (after removal) of reformation by development at the union of new lymphatic vessels, as the cells found and the reticulated structure and capsule are all capable of regeneration in these glandular regions. For this reason we must, if possible, destroy the original focus when glands are removed for infection.

In certain cases where the glands and lymphatic area are so thoroughly removed that the return of the lymph to the circulation is nearly abolished, a peculiar condition of lymph edema of the limb develops and remains until the equilibrium of the circulation is re-established. This is noticed not infrequently in cases of complete operation for cancer of the breast, where the arm may remain in such a condition for a considerable period. For a long time it was thought that there were but two lymph ducts of entrance into the circulation. The right lymphatic duct opening into the right subclavian vein receives absorbents from the upper right half of the chest and thorax, also the right upper extremity and side of the neck and head. The left or thoracic duct empties into the commencement of the left innominate vein and drains, or has been supposed to drain, all the rest of the body. Leaf has recently found that there may be a communication between the lymphatics and small veins in the groin, and it is possible that others exist and will eventually be located. The nutrition of the body is maintained by absorption of water and digested food, nearly all of which is taken directly into the circulation of the intestine, after passing the epithelial cell. By some wonderful chemistry this cell transforms this material into a suitable condition for association with the blood. The fats are unable to pass the barrier and with the products of metabolism, in maintaining the chemistry of the absorbing cells, enters the circulation by the way of the chyle ducts.

It is now generally considered that the ductless

glands are drained by the lymphatics. When we think of the great importance and the intense and sudden effects of the secretion of these glands when given to the system, we can see the benefits of an intricate duct system, while the failure to drain certain alveoli may partially explain the development of peculiar types of retention cysts, as in colloid cystic goiter. The hard dry gland often found in exophthalmic goiter and the extreme symptoms of Graves's disease, many of which may be produced by thyroid feeding, may possibly be in part from excess of drainage.

The lymph fluid being of nearly the same density as the blood, there can not be expected to be any great osmotic action into the circulation, although the ready absorption of solutions injected into the tissues is explained by direct endosmosis as well as by lymphatic absorption. The quantity of lymph depends upon the pressure in the capillaries and the permeability of its walls, while its circulation depends upon muscular action, the respiration and the heart.

The causes of inflammation are from thermal, mechanical or toxic irritation, the last including the chemical changes caused by bacteria. Some authors would limit the term inflammation to the infected cases only, calling the changes incident to other forms of irritation reparative processes. From one or more of these agents acting through the local nerve supply, there occurs a dilatation of the local arteries, veins and capillaries, followed by an increased rapidity of the circulation which soon slows, and the white cells adhere to the endothelial layer and pass between these cells to become the leucocytes in the surrounding tissue. More severe irritation, and the plasma exudes, still more severe, and there is a free escape of blood cells and fibrin, and the exudate is now capable of coagulation.

Exudates are known from their quality as serous, fibrinous, croupous, diphtheritic, hemorrhagic or suppurative. Serous exudates follow irritation, and also occur in passive congestion and venous stasis. As represented by forms of eczema, anasarca of advanced cardiac or renal disease and the ascites of obstructed portal circulation. The exuded fluids may become inoculated with bacteria in open wounds, or bacteria may make an exudate from the irritating power of the toxins, and the peptonizing power of the bacteria. This fluid is known as pus, and consists of the plasma with white corpuscles and the fixed tissue cells converted into pus cells, with the bacteria peculiar to the infection. In fresh wounds, there is an escape of a bloody, serous, albuminous fluid from the divided tissues, lymph spaces and capillaries. This fluid distends the tissues and separates the injured surfaces, preventing or delaying healing, and being highly albuminous, is subject to infection and decomposition. It is to relieve the tissues of these fluids that external drainage is established. The result of considering drainage as being the delivery in all cases of exudates to the surface is the probable explanation of why each operator has de-

veloped a system from his own experience with reference to this subject.

The changes found in special organs are most marked. The brain, in which we would not expect much cell change or repair, is filled with lymph spaces; but is very deficient in lymphatics, the subarchnoid space serving as the absorbing area on its surface. In its substance we will often have a hemorrhagic exudate remain as a local collection, then, by means of secondary changes of the blood cells and a deposit of fibrin and albumin, there is developed a surrounding wall and the exudate is now a cyst, the change sometimes requiring but a few weeks, sometimes months. Injuries of the skull and brain develop cystoid scars as a result of adhesion of the membranes and shutting off of the arachnoid space, while inflammatory diseases, unless involving the surface, may cause no change in temperature and, like cysts, will be located principally by pressure symptoms. It is well known that abscesses may remain for long periods in the substance of the brain without marked symptoms.

The liver and kidney are peculiar gland structures in which the excretory ducts can to a certain extent supply the place of lymphatics in ridding the organ of the products of metabolism. In these organs there is a deficient lymph circulation in their structure, yet a free one upon their surface, and at the region of blood supply. The symptoms of inflammation will be somewhat like those in the brain, yet less marked. Inflammation near the surface causes marked disturbances, especially should perforation of the capsule occur, and a greater field for absorption be invaded. The skin is filled with lymph vessels, constant repair and protection being necessary.

The lungs are rich in lymphatics, and infections or toxins are early and constantly delivered into the circulation with the resulting reaction of fever. The onset of infections in regions rich in absorbents, as the lung, neck, axilla or groin, is often marked by a chill to be followed by continued temperature during the infection until reaction develops protective granulation. Repeated chills occur in regions in which accumulated products of infection is delivered at intervals into the venous circulation without the intervention of the lymph system, as in sinuses of the brain, liver, bone, marrow, uterus or prostate, and occur in streptococcus poisoning where the edema and induration may cause veins to open as sinuses, or when local foci of infection occur in the circulatory system itself.

The peritoneum is but little less in area than that of the entire skin covering of the body. Its lymphatic system is most active in the upper portion of the abdomen. The lymph vessels of the peritoneum over the small intestine are numerous, while there are a few in that portion covering the large intestine, which is capable of but little absorption, as is the parietal or pelvic layer. The peritoneum covering the colon is exudative, and over the small intestine absorptive, not considering the lacteals of the mucous membrane.

The fundus of all organs is deficient in lymphatics, hence acute obstruction gives cyst formation, and chronic inflammation causes shrinking and thickening of the organ. Against infection the body has a certain degree of resistance in the blood. Fresh blood is germicidal to some extent, and later is also a culture medium from the contained albumin. It is increasingly germicidal at a temperature from 100° to as high as 104° F., rapidly losing it thereafter with increasing heat. The plasma free from albumin is more strongly germicidal than the blood. There is a continuous absorption of all exudates in regions supplied with lymphatics and in infectious diseases due to a carrying to the circulation of toxins and at times bacteria, and as a result of increased tissue metabolism, there is a rise of temperature. From repeated infections, the system may become nearly or quite immune to reactionary disturbances, and local infections long retained lose their virulence through a type of continuous inoculation by absorption in minute dose, and through the death or loss of virulence of the bacteria.

If this view of the action of the lymphatic system is correct in outline, it affords additional light upon some obscure pathological conditions. Certain organs are subject to cysts and the same ones, also, to sclerosis; we find that they are the organs with a deficient absorbent system. In theory then, a chronic excess of diffusion would be followed by connective tissue due to the chronic irritation. This would be most marked in the proximity of the vessel. Acute hemorrhage may not be absorbed and by natural changes produce cysts.

Considered in this relation to malignant disease, the condition of the lymphatic system is of the utmost importance. In fact, practically all the advancement in the modern surgery of cancer has been through a study of the areas of lymph distribution involved in any malignant focus. We now have definite gland fascia areas, which must be removed with or at the time of the removal of the original malignant growth. This is true of internal as well as external deposits. It is usually said of cancer that early operation gives a good prospect of cure.

This may be modified by the conditions or age or lymph circulation in the area involved. Thus, cancer in the young is rapidly fatal and early recurrence of metastasis frequently follows operation, the gland distribution being early involved. As compared with the young, old age with its disappearing lymph system and late operation, rather than early time alone considered, may often be more favorable for permanent recovery.

Cancer statistics as to cure improve with each decade of life, other conditions being equal.

Varieties of Drain and Drainage Adjuncts.—

First is rest by splints, pressure dressing or bed, to quiet the circulation. Second, by elevation to reduce arterial supply and favor venous and lymphatic return. Third, by massage to break up coagulated exudates and enable the lymph vessels

to remove the exuded material. A good masseur, for instance, will relieve the ecchymosis and swelling of a black eye in a remarkably short time by massage and rest. Fourth, moist dressings favor escape of the exudate from open wounds and also favors the lymphatic circulation in closed injuries. Fifth, adjuncts to drainage in the use of solutions having affinity for moisture acting by osmosis as glycerin or alcohol. Sixth, wound drainage is accomplished by the open method with or without secondary suture. Seventh, by separate incision. Eighth, by wicks, capillary or tubular drains or gauze packs as mechanical aids.

Capillary drains are of catgut, hair or silk-worm gut in bundles, and serve to drain serum of small amounts in small or large wounds where prolonged aseptic drainage is required, as after gland removal. Capillary drainage is not sufficiently free for the drainage of pus. Tubular drains deliver freely all wound secretions and in aseptic cases, should serve their purpose in from twenty-four to forty-eight hours. When of rubber they should be split from end to end instead of perforated, as it is more flexible with less danger from pressure, drains at all its length, and is easily removed. By means of a thread attached to the tube it may be taken out without removal of the dressing. In septic cases, the tubular drain should be left until the wound is lined with granulation tissue and is without pockets or accessory cavities, as granulation tissue is the natural protection of the system against absorption, as well as being a reparative process.

To freely drain the general peritoneum, nothing seems better than glass, as lymph adhesions form slowly about its surface, and a large area is thus brought under its influence. Gauze is peculiar in its action, at first being a capillary drain; later its meshes become choked with fibrin and it no longer has capillarity, therefore it should not tightly fill the opening from which it emerges. It is a great developer of granulation, as it strains out the blood cells and fibrin from the serum, thus holding in apposition to the cut tissues elements necessary to the development of granulation. Tube drains carry away the same material and granulation will be slower. It is this peculiar action of gauze which makes it necessary to leave it without disturbance for at least four to six days. Previous meddling will tear open the young granulations, give fresh injury, open lymph spaces, and in clean or septic cases it is usually a cause of rise of temperature. Gauze is used in draining acute injury of the brain and in the quarantining of acute infections of the peritoneum. Aseptic operations are frequently followed by a from one to three degrees rise in temperature within from thirty-four to thirty-six hours, which is caused by absorption of blood and is a ferment fever. Temporary fever later than this may be from the intestines, but if this temperature continues, the wound should be examined.

We may say, then, that aseptic operations in regions rich in lymphatics, where the lymph circulation is but little disturbed, will not require drainage—as ligation of vessels in the neck, Alexander's operation, and hernias in the inguinal region. We may also say that aseptic operations in these regions in which the lymph system is removed require capillary drainage from four to six days, as auto-drainage is temporarily abolished and early removal results in serous accumulations without increase of temperature usually discovered when the cases should be dismissed from care; as in removal of cervical glands, cancer of the breast and auxiliary glands, and malignant disease of testicle and inguinal glands. Free drainage of the stump should be employed in amputation for malignant disease where the glands are removed from axillary or inguinal regions.

In regions rich in lymphatics, where operations, for septic conditions, must be made, we open fresh area for absorption of toxins and our endeavor should be to use upon the incised surface strong antiseptics, such as carbolic acid followed by alcohol, chloride or lime as a caustic, or in mild cases glycerin, to prevent or inhibit the action of absorbents, and maintain the disease as a local infection. This is markedly shown in operations for the removal of bone necrosis. For the same reason the cautery is used to incise abscesses in certain regions, and also to make puncture drains in cellular streptococcus poisoning.

Iridectomy and scleropuncture in glaucoma substitute one set of lymphatics for another. In operations for the relief of increasing spina bifida, we employ a suture of two strands of silkworm gut, or catgut can be passed through the stump of the scar to temporarily deliver the spinal fluid into the tissues of the back. Experimental work is now being conducted with a view of permanently draining forms of hydrocephalus into the rich lymph system of the cervical region. In the drainage of wounds, it is a good rule to make a separate incision at the most favorable point and close the original operative wound completely. This plan will improve the scar, and in large abdominal incisions will very often avoid hernia.

In aseptic operations of the abdomen involving considerable bruising or denuding of the peritoneum, the pelvis should be elevated by raising the foot of the bed, the gravity acting as an aid to auto-drainage, the peritoneum being capable of absorbing from three to eight per cent. of the body-weight in an hour.

In septic diseases, just the opposite condition is desired to secure drainage and maintain the condition as a local one, by elevating the head of the bed and also elevating the upper extremity of the patient to gravitate to the pelvis, where delivery may be made through glass tubes. This method is used in diffuse peritonitis. The diseased or septic focus should also be quarantined by a gauze pack through a separate incision, should the condition of the patient warrant the increased operative interference.

A CONTRIBUTION TO THE STUDY OF INFECTIONS OF THE PROSTATE FROM THE URETHRA.¹

BY FREDERIC BIERHOFF, M.D.,
OF NEW YORK.

WHILE it may be confidently stated that since the more general adoption of the antiseptic plan of treatment of gonorrhea, the percentage of those cases in which an extension of the infection to the posterior urethra and prostate occurs has been greatly diminished, still this extension of the infection does occur, in a fairly large percentage of the cases of gonorrheal urethritis, in spite of the most careful treatment along the most modern and approved lines.

I exclude, of course, those cases in which instrumentation has been employed, such as the passage of sounds, catheters, etc., and those in which injections of the purely astringent drugs have formed the treatment. Why this extension of the process (even where the infection runs a mild course) should occur, sometimes even in the earliest days of the gonorrhea, and why, when it does occur, it should, in the greater number of the cases run so mild, or subacute a course, even when the actual invasion of the posterior urethra has been accompanied by acute symptoms, are questions which have occupied my attention for the past few years, and if I present the result of my observations to you to-day, it is in the hope that these findings may serve, perhaps, as a spur to others, to look more deeply into these questions than lies in my power to do.

Of recent years the view of Guyon and his scholars that the compressor urethræ form a barrier against the advances of the gonorrheal process, has been denied by competent observers, such as Diday, Fürbringer, v. Zeissl, Aubert, Eraud and others. Finger believes that the gonococci have a tendency to locate in the glandular adnexa of the urethral mucosa, and there to form their principal foci of infection; that the infection spreads along the mucous membrane, from follicle to follicle, as far as the membrane contains follicles, and comes to a halt when it reaches a part which is poor in them. Thus the process tends to spread until it reaches the pars membranacea, which has no follicles and is poor in glands, and he believes that an external provocation is required to cause the gonococci to extend over the pars membranacea to the pars prostatica, which again contains numerous gland orifices, the glandulæ prostaticæ, about the caput gallinaginis.

I believe Finger's explanation to be correct, since careful endoscopic examinations have shown me that almost all chronic anterior gonorrheas have their seat in the glands and lacunæ, and the tissues immediately surrounding them, and since examinations of cases of posterior urethritis have shown me that, in almost every case, infection of the posterior urethra was equivalent to infection of the prostate.

¹ Read at the Third Annual Meeting of the American Urological Association, Atlantic City, June 9, 1904.

We have, therefore, to look for the causes, or conditions, which, in the absence of external insults (which we all recognize as potent factors in causing an extension of the infection to the posterior urethra), and in the face of careful treatment with the gonococcicide drugs, permit the infection to spread over the pars membranacea to the pars prostatica.

If we examine the urethra in individuals presenting no symptoms referable to the genito-urinary organs, we find, in a fair proportion of the cases, hypersensitiveness and a distinct degree of congestion of the mucous membrane of the entire posterior urethra; upon palpating the prostate, in these cases, we also find moderate enlargement of the gland, with areas of softening. The prostatic secretion is somewhat increased in quantity, and thinner, and more watery than the normal, and shows, under the microscope, fewer of the normal prostatic elements. In other words, it is increased in quantity, but diluted. Furthermore, if we examine patients who, never having had gonorrhea, or, having had it and been cured of it, complain of symptoms referable to the genito-urinary organs—the so-called “sexual neurasthenics”—we usually find an even more decidedly exaggerated sensitiveness and congestion of the posterior urethra, with similar, although more pronounced, evidences of prostatic congestion.

In other words, a large number of males who do not suffer from gonorrheal urethritis present evidences of a mild, chronic congestion of the posterior urethra and prostate, conditions which distinctly favor the extension of any urethral infection to the congested parts. If you will bear in mind the facts that the gonococcal infection spreads, by the rapid reproduction of the germ, *upon the surface* of the mucous membrane (and then between the cylindrical epithelial cells), and that anything which favors the congestion of the membrane fosters the rapid spread of the infection, I believe that the cause of this spread to the posterior urethra and prostate will be explained, at least for a large proportion of the cases. Excesses in venery, the use of alcoholics, sitting for long periods, horseback or bicycle riding, etc., favor the spread of the infection to the prostate by causing a similar congestion of the posterior urethra and prostate gland.

I believe this view was first advanced by me, in an article in the *MEDICAL NEWS*, of December 28, 1901. Others have since agreed with me. Since then I have continued the examinations then referred to, and have had no cause to change my views; on the contrary, I have only had that belief strengthened.

The exciting causes which have brought about this congestion of the deep urethra and prostate, in the cases which I have examined, have been masturbation (in the younger patients and many of the neurasthenics), protracted indulgence in withdrawal, coitus interruptus, sexual excesses, or perverted indulgences, and long-continued se-

dentary occupations. The last-mentioned I have frequently found, in dispensary patients, especially machine operators, to be the cause of a slight, mucous discharge, accompanied in patients of a neurotic type, by ill-defined, deep-seated urethral pain, dull, heavy, lumbar dragging, precipitate, or nocturnal emissions, constipation, etc.

I believe that you will agree with me that most cases of gonorrheal prostatic infection run a comparatively mild course, and are of the catarrhal (endoglandular), or the follicular type, and that a large part of the cases of the parenchymatous type can be cured without incision. Certainly, this has been my experience with my cases, both in private and dispensary practice. Why the course of a prostatic gonorrhea should, in the majority of cases, be so mild, when compared to the urethral inflammation, and why, so long as there be no reinfection of the urethra, the prostatic involvement should give so few symptoms, are questions which have long interested me.

If the prostatic ducts were lined with pavement epithelium, I should say that it is the natural resistance of the squamous cells to the invasion of the gonococcus which protects the gland from the encroachment of the germs; but, according to Krause and Langerhans, they are lined with cylindrical epithelium, which, in itself, offers but little resistance to the spread of this infection. So we must look elsewhere for the cause.

This, I believe, is to be found in the naturally alkaline reaction of the prostatic fluid. Although some authors refer to it as being faintly acid, or neutral in reaction, I have found that, in almost all cases, whether in patients presenting no symptoms referable to the gland, or in those with prostatic congestion, or inflammation, the reaction was *alkaline*, and in only isolated instances was it neutral, or very faintly acid, and then not persistently so.

A few years ago I attempted, in a series of cases, to cultivate, upon serum-agar, the gonococcus obtained in the secretion of infected prostates. To my great disgust, I was unable to do so, in a single instance. After careful control of the culture-media, etc., I communicated the facts to my chief, Dr. Frank, who referred the question to Dr. Wassermann, and was told that the gonococcus can only be cultivated with difficulty from the prostatic secretion. Similarly, Finger, Ghon, and Schlagenhauser report that the gonococcus grows but *poorly* on serum-agar of *high alkalescence*, better upon this culture-medium when a little acid sodium phosphate has been added, and *very well* upon an *acid medium*. And the prostatic secretion is usually of a *decidedly alkaline* reaction.

Unfortunately, I have been unable of late to carry on culture experiments along this line; but I feel that the fact that the gonococci which enter the prostatic ducts are *brought into and kept in constant contact with a secretion of a distinctly*

alkaline reaction, may be the explanation of the generally mild character of gonorrheal prostatic infection, through a temporary inhibition of the power of development of the germs. In other words, I believe that the character of the prostatic secretion forms a natural protection, even if only partial, against the involvement of the gland itself. I advance this view simply as a *theory*, in the hope that further study and experiments may, at some future date, allow me to speak definitely upon the topic.

When gonorrheal infection of the prostate occurs, it does so in one of three forms, viz., the endoglandular, or catarrhal type, the follicular and the parenchymatous.

In the first the gonococci do not penetrate deeply into the subepithelial layers, but lie upon the surface, or between the cells. In the cases of this type which are seen early, there may be little or no change in the urine, and few or no symptoms, unless the onset be acute. The onset is, however, in this, as in the other forms of gonorrheal prostatitis, usually of a subacute, creeping character, and is apt to altogether escape the patient's notice.

The prostate is found, on examination, to be changed in size and consistence, although in the mild superficial type, the changes may be so slight as to be hardly palpable, and to be only a very slight, uniform enlargement and softening. As the degree of severity of the process increases the enlargement is more pronounced; the softening is, however, of the same character as before, and the prostate feels "doughy." The quantity of prostatic secretion is usually abnormally large; its microscopic appearance may be normal, or more watery than usual. Under the microscope it is found to contain fewer of the lecithin granules than the normal, more mucus, few leucocytes (where the process is purely superficial), and gonococci, usually extracellular. Where the germs have penetrated deeper, there is a yellowish tinge to the secretion, with a degree of opacity, the color and opacity varying in depth according to the severity of the process. Microscopically the pus cells are found to be much more numerous, and numbers of them contain gonococci.

Under appropriate treatment, which is usually in cases of this type, not of long duration, the enlargement and softening gradually disappear, the leucocytes diminish in number, as do the gonococci, finally disappearing entirely—the germs usually an appreciable length of time before the pus cells. In the later stages, epithelia appear in the secretion, but also gradually diminish in number and disappear, and the entire character of the secretion gradually becomes normal.

The second variety, the follicular, represents the condition in which the gonococci have penetrated into the subepithelial tissues, and there keep up a mild degree of inflammation. Owing to this perilobular, productive inflammation, the affected lobules gradually become surrounded by

a layer or sheath of infiltration, which imparts a sensation harder than the normal prostatic tissues, to the examining finger. In other words, we feel *areas of hardening* in the gland. Where the duct, or outlet of a lobule is involved to such an extent that it is completely occluded, this sensation is most pronounced. The second urine is cloudy, usually distinctly so. It is the follicular type of prostatitis which gives us those chronic cases which give a history of having persisted for months, or even years, and it is at times necessary to examine the secretion several times after massage of the prostate, when the older cases are first seen, before one can discover gonococci in the secretion; it is this form, too, which gives us the seeming relapses, when, after the gonococci have been absent for days and the urine clear, there is a sudden reappearance of turbid urine, with pus and gonococci in the prostatic secretion, following massage, or the provocative tests.

I have repeatedly experienced this sudden return in the treatment of cases of this type, and it is due to the rupture and emptying of the contents of a previously occluded, diseased lobule. Continuance of the treatment is followed by a rapid subsidence of the symptoms. In this type of cases also it is frequently necessary to resort to the application of heat to the prostate, through the rectal psychrophore, in order to aid in softening the areas of hardening, and to make it possible to express the diseased secretion.

Both the aforementioned types of prostatitis begin usually without pronounced symptoms to mark the onset of prostatic involvement. The onset may, however, be of an acute character, with pronounced symptoms, such as frequent and painful micturition, followed by tenesmus. Seldom is there any chill, or febrile movement, or feeling of pain and heaviness in the perineum. These latter usually denote the onset of the acute form of the third, or parenchymatous, variety.

In the milder cases of parenchymatous prostatitis it is sometimes difficult to differentiate between this form and the moderately pronounced form of endoglandular prostatitis, especially when the latter occurs in neurotic individuals. But, whereas the enlargement of the prostate, in the latter cases, is of a *doughy*, soft character, in the former it is more uniform and elastic. The sensitiveness is, in the former, also more acute, and distinctly a *pain*, while the patients with the latter type usually speak of the examining fingers causing rather a *disagreeable* than a *painful* sensation. And while the expressed secretion, in the endoglandular variety, seems simply to be exaggerated in amount, and to contain more of the fluid elements, with a varying number of pus cells, that of the parenchymatous variety has a *reddish* tint, and is found to contain *erythrocytes* in large numbers.

In the pronounced form of the trouble, however, there is no difficulty in making the diagnosis. Usually of acute onset, there is a distinct

increase in the frequency of urination, accompanied by a burning pain, and followed by a marked degree of tenesmus. If the enlargement of the gland is at all pronounced, there is difficulty in urination, which, at times, even amounts to retention. There is a dull, dragging pain in the perineum and rectum, with distress and difficulty in defecation, leading at times to obstipation. The pain tends to extend to the glans penis, toward the hypogastrium and into the thighs and makes sitting, or standing, very difficult and painful. Chill and fever may occur, and usually denote active suppuration; but they may be absent, even in the face of a prostatic abscess. On palpation, the prostate, in the severer form of parenchymatous prostatitis, is found to be markedly enlarged (sometimes to three, or four times its natural volume), hard, and exquisitely painful to the touch. When suppuration supervenes, an area of softening develops at some point in the gland. When rupture of the abscess occurs, relief from the pain and sensitiveness is usually marked, and a distinctly depressible area marks the point of greatest tissue-destruction.

The question whether abscess formation in the prostate occurs as a result of pure, gonorrheal infection, or of mixed infection, is still an open one.

The prognosis is good, as a rule, and even the more stubborn cases of the follicular variety are definitely curable, if proper treatment be persisted in. Only in those cases where a prostatic abscess spreads to and involves the pelvic cellular tissue, or those in which the symptoms of systemic involvement are pronounced, does the prognosis become grave.

The treatment of gonorrheal prostatitis consists principally of careful massage of the affected gland, combined with irrigations with solutions of the gonococcicide drugs. In spite of the doubts cast by some upon the efficacy of massage in ridding the prostate completely of its diseased contents, I must maintain that, when *properly carried out*, this procedure makes it possible to gradually expel the infection completely. Naturally, when the infectious matter has been expressed into the urethra, it should at once be rendered innocuous, by means of a flushing of the entire urethra and bladder. Personally, I prefer to irrigate the entire canal both before and after the massage, whether for purposes of examination, or treatment, since I believe that, in this way, the chance of entrance of germs into the seminal ducts is greatly diminished.

In the milder form of endoglandular prostatitis, a few applications of this treatment usually suffice to definitely rid the gland of infection. In the follicular form, the treatment must be persisted in, and usually covers from four to eight weeks. Frequently, in these cases, it becomes necessary to resort to the application of heat to the prostate. This, applied nightly, I have found to be of great service in softening the hardened nodules, and rendering possible the more speedy evacuation of their contents.

Where the onset is acute, rest in bed, and appropriate diet are indicated,—but not a suspension of the irrigations, so long as we work entirely with the gonococcicide drugs. Here the use of heat is also of service (in the form of a hot sitz-bath), and is grateful to the patient. Where pain and tenesmus are marked, opium and belladonna, in the form of rectal suppositories, help to give relief. In the parenchymatous form, these measures are also indicated.

Contrary to the usual usage, I believe that febrile movement is not, *in itself*, a contra-indication to local treatment. I have frequently seen rapid defervescence follow the inauguration of these measures; naturally, they must be applied with the utmost gentleness. But where pain and tenesmus are so great, or are so much increased by the treatment as to weaken the patient, I believe in waiting until the acute stage subsides; after that, *begin local treatment as soon as possible*. And where massage is not well borne, at least the irrigations should be employed to repeatedly disinfect the surface of the mucous membrane and limit, so far as possible, the tendency of the disease to spread.

I am not, however, an advocate of long-continued, or heavy pressure in massage of the prostate. I have too frequently seen brusque, or strong massage followed, in a few hours, by an involvement of the neighboring organs. It should be *very gentle*, for a duration *not exceeding a minute*, and be rather a stroking pressure than a kneading of the gland.

When, in follicular prostatitis, an occluded follicle ruptures, we feel a softened depression at the point where the focus of hardening had previously existed. Gradually the surrounding zone of infiltration disappears, until the prostate again feels normal. Similarly, too, the breaking down of the tissue and formation of an abscess, in parenchymatous prostatitis, is marked by the appearance of an area of softening, in the inflamed gland. The majority of prostatic abscesses tend to discharge by opening into the prostatic urethra, consequently, in the majority of cases, a counter-opening is not necessary, and it is possible to cure them with massage and irrigations also. Where the process breaks through the capsule of the gland, and involves the pelvic connective tissue, the perineal incision should not be delayed.

I have been struck by the frequency with which patients suffering with prostatitis, of whatever type, complain of a variety of nervous symptoms, chief among which are marked mental depression and, in the endoglandular and chronic follicular cases, decided disturbances in the sexual functions. These symptoms give way rapidly upon an improvement in the prostatic condition, and usually disappear entirely upon the restoration of the prostate to the normal.

Frequently there exists, simultaneously, an infection of the glands and lacunae of the anterior urethra with the prostatic infection. In such cases no instrumentation should be employed un-

til after the cure of the prostatitis, and then only when combined with flushings of the urethra, as before mentioned, to avoid re-infection of the prostate.

For purposes of closer observation, I have made use only of my own private patients, who could be closely controlled. In all, 62 cases have come under my observation with a gonorrheal or a mixed infection of the prostate. In 54 of these the infection was present when the patients were first seen, while, in the remaining eight it developed during the course of urethritis, for which I was treating them. In two of these eight the neglect of local treatment by the patients themselves, coupled with severe bodily excitement, in all probability, permitted, or caused the infection to spread to the prostate; in one it was the result of similar neglect, coupled with prolonged railway travel; in one as an extension of a periurethral inflammation, which was present when the patient came to me, so that proper treatment could not at once be begun; in two as a result of prolonged sexual excitement; in two for no traceable cause.

Forty-seven cases were of the endoglandular type, eleven of the follicular, four of the parenchymatous, of which two were prostatic abscesses. The eight which developed while under my care, were all of the endoglandular form.

In 57 of the cases there was a pure gonococcus infection of the prostate present, in five a mixed infection. Of these latter, in one case of prostatic abscess, there was a large, plump bacillus present with the gonococcus; in another, a case of parenchymatous prostatitis complicated with cystitis, ureteritis and pyelonephritis, a large staphylococcus was found in addition to the gonococcus. In one endoglandular case a diplobacillus, in another of the same type a large staphylococcus, and in a third, complicated with cystitis, other bacteria, of a kind not noted, were present with the gonococci.

Five cases (four endoglandular, one prostatic abscess) were seen in consultation. Eleven (nine endoglandular, two follicular) withdrew from treatment. The remaining 46 cases were treated until the disease was at an end; of these 34 were of the endoglandular, nine of the follicular, and three of the parenchymatous type, of the last of which one was a prostatic abscess. All of the 46 were discharged cured, and it was possible to control 41 of them later, at different periods, and all were then found to be still free of gonococci, and with normal, aseptic prostatic secretion in spite of their return to their usual habits of life. The controlled comprised 30 of the endoglandular, eight of the follicular, and three of the parenchymatous type.

Complications were present in ten cases, when they entered treatment; epididymitis dextra in two cases, sinistra in three, sinistra complicated with acute funiculitis in one, cystitis in one, ureteritis and pyelonephritis in one, tendovaginitis in one, periurethritis in one.

Complications developed in 13 cases; they were epididymitis dextra in five, this in company with a Cowperitis in one, and epididymitis sinistra in seven. In all but two of these cases the complications were traceable to distinct causes, such as exposure to chilling, severe bodily exertion, railway travel, and sexual excitement. Of the two exceptions, one was a case of prostatic abscess, the other of acute follicular prostatitis, and it is likely that the massage was the exciting cause of the complication.

The duration of the cases from the time that treatment of the prostate was begun until the gonococci were definitely absent and the secretion normal, under the microscope, was, in the cases of the endoglandular type, as follows:

Under one week, in ten cases.

One to two weeks, in eight cases.

Two to three weeks in six cases.

Three to four weeks, in one case.

Four to five weeks, in one case.

Five to six weeks, in one case.

Six to seven weeks, in one case.

Seven to eight weeks, in two cases.

Nine to ten weeks, in two cases.

Twelve to thirteen weeks, in one case.

Fourteen to fifteen weeks, in one case.

In other words, 24 of the 34 cases were cured within three weeks.

In the follicular type the duration was:

Four to five weeks, in one case.

Six to seven weeks, in two cases.

Seven to eight weeks, in two cases.

Eight to nine weeks, in one case.

Nine to ten weeks, in one case.

Eleven to twelve weeks in one case.

Thirteen to fourteen weeks in one case.

The duration, then, of these cases, is longer than that of the endoglandular type.

Of the parenchymatous type, the duration was five to six weeks in one case; nine to ten weeks in another.

The prostatic abscess lasted eleven to twelve weeks before it could be pronounced cured.

THE USE OF ABSORBENT PAPER IN THE SERVICE OF PRACTICAL HEMATOLOGY.

BY T. W. TALLQVIST, M.D.,

OF HELSINGFORS, FINLAND;

LECTURER ON THE PRACTICE OF MEDICINE AT THE UNIVERSITY OF HELSINGFORS.

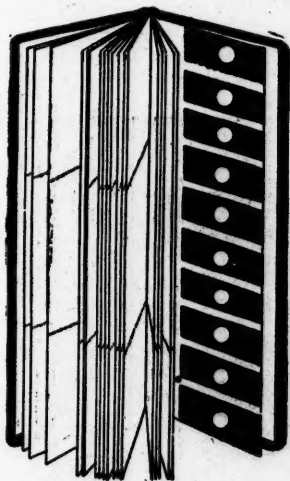
THE great strides which research has made during the last decades in the department of hematological science has demonstrated the pre-eminent importance of a knowledge of the state of the blood in judging, not only of the genuine anemic conditions, but also of a number of other pathological circumstances. It has, therefore, become an imperative duty for the practising physician at all consultations on disease not to overlook the condition of the blood.

Here, however, we are confronted by a not inconsiderable difficulty. If every time an anemia or other pathological condition of the blood might be suspected to exist, we should set to

work with all the apparatus required for a minute examination of the blood, the consultation hour would assuredly not give time for many such scrutinies. Besides which, the expense of this apparatus would in many cases stand discouragingly in the way of the individual physician.

The presence or absence of anemia makes itself known above all in the quantity of the hemoglobin, and the first instrument needed is certainly, under such circumstances, a practical and easily applied hemometer.

The "*hemoglobinscale*," constructed by myself some years ago, can, in this respect, scarcely be excelled as regards simplicity in application, and the widespread favor which has already been won by it in different countries speaks well for its having supplied a practical want. As is known, the quality of color in the blood is tested with this instrument by soaking a drop of blood into a piece of white absorbent paper, after



which the red spots thus obtained can be directly compared with a color scale of ten different tints.

The idea of using absorbent paper for estimating the color of the blood, I found first in Ehrlich and Lazarus,¹ and it was a development of this idea that led to the construction of the hemoglobinscale.

Since this simple apparatus has come into the market in book form it has repeatedly been subjected to control examinations. Among others, Hedemies² finds that the exactness of the results obtained by the scale do not fall far short of those as determined by the Fleischl hemometer, and are fully equal to those given by the Gowers method. Aspelin³ in his hematocrit examinations, has likewise found in the main a good correspondence with the Fleischl-Miescher hemometer, after which the scale has been constructed.

It has been demonstrated that the hemoglobin scale, in addition to the practitioner's needs, can also be of service for clinical and other purposes.

Cabot says ("Clinical Examination of the Blood") that it "can be used by any one with sufficient accuracy for practical purposes, and with a celerity that makes hemoglobin estimation no more of an undertaking than feeling the pulse," and that "it deserves to supplant all other hemoglobinometers in clinical work" and also "I have used the instrument in several hundred cases, and have never yet been misled by it." Of course this, like all other hemometrical methods, requires a certain amount of practice in order that the results obtained shall be entirely reliable.

The above holds good, however, only on the hypothesis that the colors in the scale which is used are exact, and the difficulties have not been slight in the obtaining of a thoroughly correct reproduction, as not only of the intensity, but also of the shades of change from color to color. There is also added the difficulty that the printed colors undergo a change unless every precaution against the same is used, and it is on this account that I find myself called upon to personally superintend the preparation of the scale.

A piece of white absorbent paper of suitable quality is, therefore, a great assistance to a practitioner in making an anemia diagnosis and for judging its intensity. Ehrlich and Lazarus⁴ express themselves on the subject in the following manner: "If this easy, convenient method, which can be used even during a consultation hour, were to be followed more frequently, it would make the popular diagnosis, 'anemia,' lose ground. In the case of neurasthenic patients, who only too often believe themselves to be anemic, and who look anemic, a *demonstratio ad oculos* is often sufficient to convince them to the contrary."

In addition to this, the piece of absorbent paper gives us, in different cases, a number of other valuable suggestions. With the publication of my color scale⁵ I have drawn attention to a phenomenon which at times may be noticed in anemias in the spot of blood on the absorbent paper. Around the colored spot extends a moist ring, which is especially visible when the paper is turned toward the light. The ring always denotes a great decimation of the number of blood corpuscles, and it has been shown that, as a rule, this condition first appears when the number of blood corpuscles per cubic entity is reduced to about half the normal, or less. The greater the diminution the broader is the moist transparent ring. The presence of the ring is thus an indication that a graver anemia exists. This phenomenon, as a rule, does not appear in chlorosis, even of considerable intensity, in which, in general, the diminution of blood corpuscles does not reach an excessive degree. On the contrary, it is seldom absent in pronounced so-called pernicious anemia. These observations have since been confirmed from other quarters.

Finally there is still another form of disease of the blood which, in a special manner, makes its presence known by the absorbent paper test. I refer to leucemia. If the diagnosis has not already been made the attention cannot fail to be immediately directed to the condition as soon as the attempt is made to drop blood on the paper. In striking contrast to the usual conditions we find that the drop is sucked up by the absorbent paper very slowly, thus an appreciable time elapses before the spot has dried sufficiently to allow the test to be made. With a closer scrutiny it is perceived that the shade does not accord with any of those found in the scale, for which reason also an estimate of the strength of the color cannot be made. The large number of leucocytes, it is true, must be considered to be responsible for the change, in the physical condition of the blood. Only a great augmentation of the amount of white blood corpuscles, such as we find in leucemias, is shown in the above-named manner by the absorbent paper. Possibly the altered condition of the leucocytes themselves plays a part herein.

As a valuable addition to our usual simple physical examination methods the absorbent paper test for the blood is, therefore, under many circumstances not to be despised by the practising physician.

¹ Die Anämie-Nothnagel's spec. Path. und Therapie; Bd. VIII, Thl. I, H. 1.

² Upsala Läkareförenings Forhandlingar, Bd. VI, 1901.

³ Zeitschrift für klinische Medizin, Bd. 99 (Festschrift für Runeberg).

⁴ Loc. cit.

⁵ Zeitschrift für klinische Medizin, Bd. 40, H. 1; Archives generales de medicine, 1900; St. Paul Medical Journal, 1900.

THE CLIMATE AND WATERS OF RINGS, VIRGINIA.

BY GUY HINSDALE, A.M., M.D.,
OF HOT SPRINGS, VA.

THE Hot Springs of Virginia owe their popularity as a health resort to a remarkable combination of climate, a variety of mineral springs for external and internal use, a complete bathing equipment, and an establishment which provides accommodations of the first rank. Although a large proportion of visitors come for the treatment of various affections, there is much to attract the ordinary tourist.

The climate is distinctly stimulant, as might be expected from an altitude of nearly 2,400 feet in a valley among the mountains of Southwestern Virginia. Compared with New York, Boston, Philadelphia or Chicago, the air is rarer, dryer, purer, and more invigorating. The cold in winter is not so penetrating, and the summer heat never so intense.

Annual Summary.

HOT SPRINGS, BATH CO., VA. Elevation 2,400 feet.	
1899.	
Annual mean temperature,	51.7° F.
August 4, highest,	91°
February 10, lowest,	14°
Total precipitation for the year,	40.77 inches
June, greatest monthly precipitation,	7.60 inches

November, least monthly precipitation,	0.61 inches
Total snowfall,	4 inches
Number of rainy days,	65
Number of clear days,	222

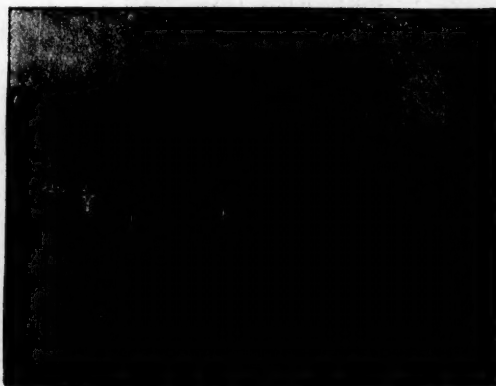
1903.

Annual mean temperature,	49.4° F.
August 25, maximum,	88°
February 18, minimum,	-6°
Total precipitation,	47.66 inches
June, greatest monthly precipitation,	7.78 inches
May, least monthly precipitation,	1.25 inches
Total snowfall,	19 inches
Number of rainy days,	112
Number of clear days,	177

October, November and December are the months of least precipitation; June and July are characterized by heavy thunderstorms. The average annual rainfall is 40 inches.

In 1903 the last killing frost was April 27, and the first October 18.

The temperature at Hot Springs during the past winter, which was unusually severe, reached -6° F. The highest recorded was 98° F. There



The Bath House, Virginia Hot Springs.

is a wide diurnal variation, and the summer nights are cool, and the mid-day temperatures in winter are often 30° F. above the minimum at night.

The air is much dryer than at the seaboard. The soil is mixed with clay in the valleys, and the outcropping of the Shenandoah limestone accounts for the calcareous nature of the water. But close to the limestone are formations of trap and shale. The outcroppings of trap are vertical and form the backbone of the ridges so common in this portion of Virginia. The shale affords a purer and more palatable water, and it is this which affords the ordinary water for table use. The geological formation is a glacial drift, and most beautiful erosion effects are seen all through the valley. Great masses of limestone, gravel, and detritus are massed along the hillsides, and some remarkable effects have been produced. Water courses penetrate the soil for miles under-

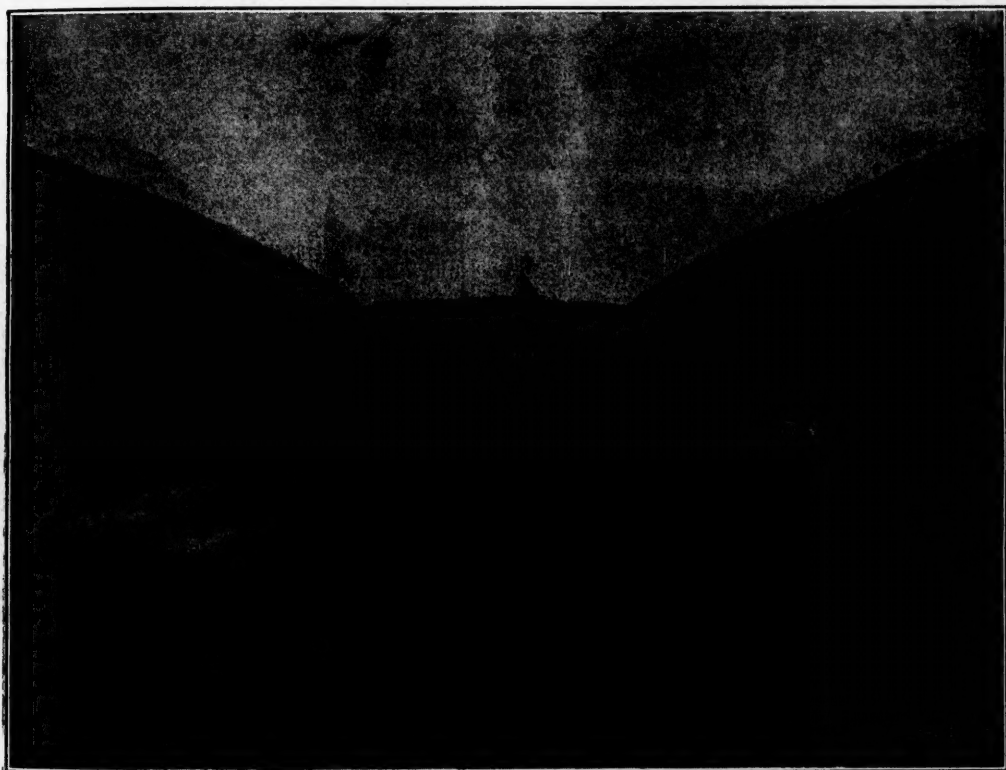
ground and emerge in bold streams from under the ridges, which rise a thousand feet above them.

One of the striking features of the locality are warm springs and cold springs in very close proximity. These may vary 45° F. within fifteen feet of each other, and evidently, have their origin in widely different sources.

The mineral springs owe their efficiency mainly to the methods employed in their application. The Boiler Spring, which is used for bathing, has a natural temperature, when delivered in the baths of 104° F. It contains total solids of 34 grains per gallon, mainly calcium and magnesium carbonate and magnesium sulphate. Its contained

In addition, there is the latest and most complete hydrotherapeutic apparatus, the Baruch-Richter douche table, with circular, rain and Scotch, jet and perineal douches and hot-air cabinets. Trained masseurs and attendants are employed. The physicians thus have at their command the very best combination of means for the successful treatment of gout, rheumatism, and many nervous diseases, including insomnia, neurasthenia, hysteria, hypochondria and malnutrition.

There are walks of moderate and regular grade, with resting places every tenth of a mile, and mountain paths which are available for



gas, CO₂, amounts to twenty-four inches per gallon. The flow from this spring is about 130,000 gallons daily. This water is conveyed by gravity in protected iron pipes, 200 yards to the bath-house, where it is used for the spout and tub baths. The pressure of the spout bath may be regulated up to a maximum of eighteen pounds to the square inch, and for the tub bath may be moderated with colder water. Cold water for douches can be had in every bath-room. The tubs are constructed so as to afford a strong, buoyant flow of water freely flowing over the sides and drained away. Connected with the twenty-six bath-rooms are rooms with couches for hot packs, for massage, and a solarium for rest afterward.

graded exercises and the reduction of overfatness. The climate and attractive scenery add much to the value of this resort.

The property of the Hot Springs Company embraces several thousand acres, and its natural beauties have been conserved by most intelligent engineering. The hotel, which accommodates over 600 guests, occupies an elevated knoll near the principal springs. It is a substantial brick building in the colonial style, and was built three years ago on the site of a former structure. Its reputation is of the highest order. While in no strict sense a sanatorium, it provides many of the features which invalids and others desiring medical treatment require. These include a diet menu,

with unlimited milk served in sealed bottles from a dairy where the herd of Alderneys is inspected and tested at proper intervals; an ice plant in connection with the hotel, and a supervision of the springs and general water supply and sanitary arrangement by a competent chemist and hygienic expert, Dr. Henry Froehling, of Richmond. For the convenience of bathers the hotel is connected with the bath-house by an enclosed passage-way.

The waters are applied by attendants in accordance with prescriptions. These indicate the use of the spout, from a fixed nozzle delivering warm water, 104° F., at a pressure of sixteen to eighteen pounds to the square inch; a tub bath at various temperatures from 95° to 104° F. for not over five to ten minutes, followed with a pack in three or four hot blankets, a cold douche and an alcohol rub. The attendants may also rub the patients in the tub. Usually not all these features are employed in the same bath.

Analysis of Healing Spring Water.¹

	Grains per gallon.
Magnesium carbonate,	3.435
Magnesium sulphate,	6.076
Calcium sulphate,	2.380
Calcium carbonate,	23.065
Sodium sulphate,	1.673
Sodium chloride,	0.143
Potassium sulphate,	2.586
Potassium chloride,	0.183
Lithia carbonate,	0.0356
Ferrous carbonate,	0.193
Alumina,	0.048
Silica,	2.677

The Healing Springs, which are three miles distant, are owned by the Virginia Hot Springs Company, which also controls the Warm Spring, seven miles farther up the valley. The Healing Springs water is the most efficacious and most generally used for internal administration at this resort. It contains 36 grains of total solids per gallon, principally calcium carbonate, magnesium sulphate and carbonate of sodium sulphate. It is considered, by reason of its diuretic properties and its acceptability to the stomach, the best water to eliminate uric acid from the system. Unlike the sulphur water, it keeps well after transportation, and is suitable not only for use during a residence at the spring, but for the "after-treatment" at home. The magnesia, sulphur, and soda springs are also used as individual cases require. The temperatures are 98.2°, 99.4° and 74° F., respectively.

It is a common observation that a decided reaction follows the first three or four baths. This should be anticipated, and is in no sense an indication that the baths do not agree with the patient: This febrile reaction, with swellings of the affected joints, is the first step toward the elimination of morbid products.

It is not claimed that the marvelous results from bathing in these hot springs are due to absorption by the skin of the mineral constituents of the water, but they are attributable rather to a

temperature effect. The heat or cold stimulates the peripheral nerves of the skin, and these, in turn, favorably affect the central nervous system.

It is a well-established fact, not, perhaps, generally recognized, that water holding less saline matter in solution is more readily taken up into the blood stream than water containing much saline matter. The denser waters are liable to cause a sense of pressure and fulness of the stomach. The waters used at the Hot Springs of Virginia are of the lighter class, none of them containing over 35 grains of solid contents per gallon. The waters are therefore easily borne. The only objection is that in susceptible persons there may be slight constipation during their use.

Out-of-door sports are a great help in treating patients at the mountain spas. Exercises on the golf links, on horseback, and mountain climbing all have their place in treatment, and, properly used, make life attractive. On the other hand, there is a great tendency at a fashionable resort to indulge in rich foods and to drink wines and strong liquors. These tend to undo the good effects produced by the baths and the climate. Too much stress cannot be placed on the proper regulation of diet and on abstinence from alcoholic drinks in the successful treatment of gout, rheumatism, and most nervous affections. Many visit the Hot Springs of Virginia and similar resorts to restore a proper function to the stomach, the kidneys, or the liver. The use of hot baths and diuretic waters accomplishes much; as a rule, it is easier to break off bad habits at the springs than it is at home, and under new medical authority much can be done for these cases.

THREE CASES OF PROBABLE PSITTACOSIS.

BY HERMAN F. VICKERY, M.D.,

OF BOSTON;

WITH BACTERIOLOGICAL REPORT

BY OSCAR RICHARDSON, M.D.,

OF BOSTON.

In 1879 J. Ritter¹ reported a house epidemic of severe pneumonia which he ascribed to contagion from parrots, or rather the cages in which the birds had been transported. Similar observations were made by Ost² in Berne in 1882, and Wagner³ in Leipzig in 1882 and 1886.

In December, 1891, 500 parrots were purchased in Buenos Ayres for the Paris market. Of these 300 died on the voyage and 200 reached Paris in February, 1892. During that year there were 49 cases of the disease now known as psittacosis, ascribed to infection from these parrots, with 16 deaths. In 1893, seven cases with five deaths; in 1894, two cases, both of which recovered; in 1895-96, 12 cases, with three deaths.

In 1894-95 there were house epidemics in Florence and Ponto of a malignant atypical pneumonia, appearing almost simultaneously in several members of the same family, or even involving the whole family, and in some instances conveyed directly from one individual to another.

¹ By Dickore and Morgan, Cincinnati.

This visitation was ascribed to parrots which had been imported by way of Genoa from South America. Observations⁴ were made by Banti, Malenchini, and Palamidessi.⁵

In 1897 it was reported⁶ that in Genoa 14 persons fell sick and eight died because of two parrots brought from Brazil.

In 1898 in the Julian Venetia three inmates of one house fell sick and of these two died where two parrots had died shortly before. Leichtenstern⁴ observed house epidemics in Cologne in 1898. In one there were ten cases and four deaths; in a second eight cases with one death. Leichtenstern regards it as probable, but not susceptible of absolute proof, that both of these

cholera, but more like Nocard's bacillus, though apparently not identical with it.

In 1896 Gilbert and Fournier¹⁰ reported five cases of psittacosis in man; of these two died. In the heart's blood of one Nocard's bacillus was found post mortem. It proved to be an extremely virulent organism, killing rabbits, mice and pigeons within fourteen to eighteen hours after inoculation.

Nicolle¹¹ reported, in 1899, an epidemic affecting eight persons, of whom four died. Although he did not find Nocard's bacillus, he obtained a serum agglutination from a culture of that bacillus in dilutions of 1 to 50 and 1 to 60. The serum also caused a clumping of typhoid bacilli,

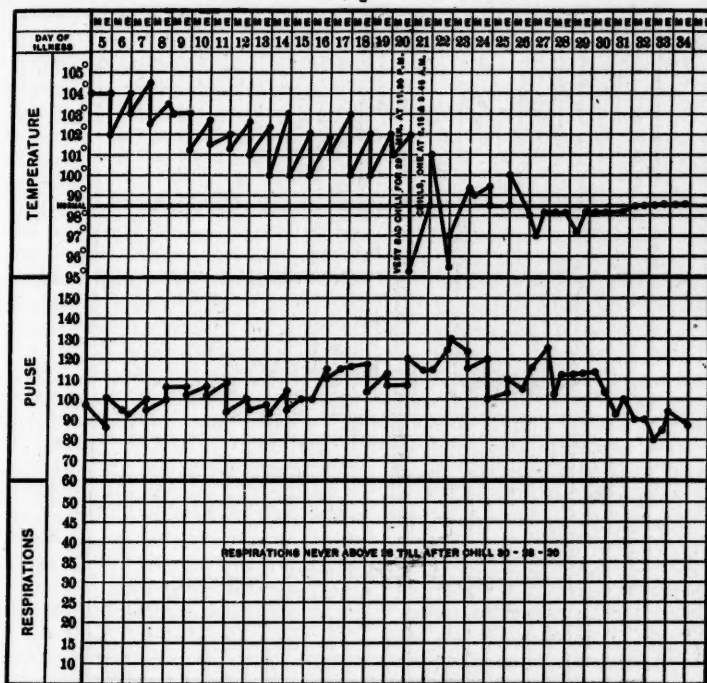


Chart of Mr. M.

groups of cases were referable to contagion from parrots.

In 1880 Eberth⁴ reported the discovery of enormous numbers of micrococci in the body of a gray parrot, and in 1883 M. Wolff⁶ examined the bodies of 12 gray parrots from the Guinea coast with a view to explaining the immense mortality in parrots brought thence to Germany. He also found micrococci in great numbers.

In 1893 Nocard⁶ isolated a specific bacillus belonging to the group of colon bacilli.

Among the Florentine cases Palamidessi (already mentioned), in a house epidemic which attacked five persons in one family a few days after a South American parrot was introduced, found a microbe similar to the bacillus of chicken

although the patient had never suffered from typhoid fever; but Widal¹² and Sicard⁴—1896—claimed that they could differentiate the typhoid bacillus from Nocard's by the serum reaction.

The symptoms of the disease in parrots are: loss of appetite, debility, drooping of the wings, and diarrhea, ending with convulsions and death. In man the symptoms of the Paris epidemic might be summarized as those of a grave typhoidal condition, with atypical pneumonia. The onset is acute, often with chilliness or a true rigor. Exceptionally the disease begins insidiously, but in that case there is apt to be a chill when the pneumonia begins. The temperature is often 103° F. on the first day and perhaps 104° F. on the second day of the illness. The

fever is more or less continuous, with a termination by lysis. In many cases successive foci of pneumonia develop, giving the temperature curve a recurrent type.

With the onset the patient is feeble and depressed; he usually has a violent headache and is often dizzy. There may be delirium. As a rule there is obstinate constipation, but, some cases suffer from diarrhea. The spleen is always enlarged; there may be a roseolar eruption or petechiæ. From the beginning of the disease there is a noticeable cough, and on auscultation subcrepitant râles are found throughout both lungs; then after a few days there is a slow development of pneumonia, which may be

in Leichtenstern's cases. He sums up as follows: First, the parrot which he examined did not die of infection from Nocard's bacillus. Second, no conceivable etiological connection can be proved between the disease of the parrot and the illness of those in whose house it was. He adds that he does not at all wish to deny the possibility of the existence of a genuine infectious disease in parrots communicable to man.

As Warthin states, "the bacteriology of psittacosis and the true relations of the parrot disease to the atypical pneumonia seen in man are yet to be definitely determined."

This outline of our knowledge as to psittacosis may be convenient for comparison with three

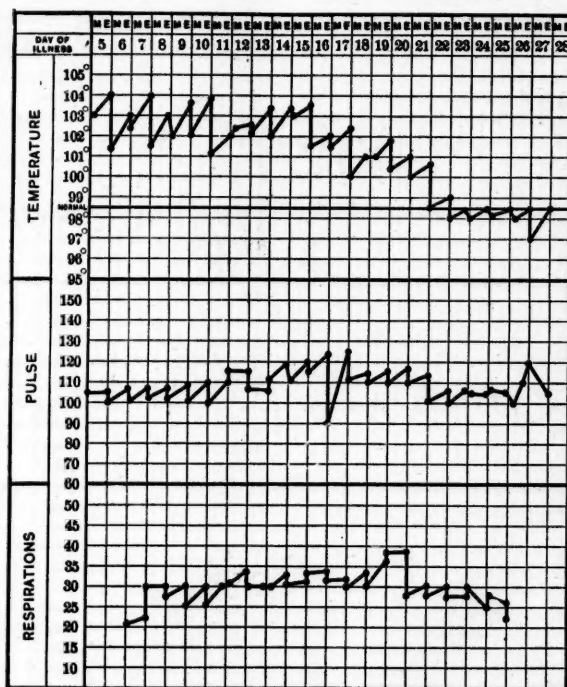


Chart of Mrs. M.

either lobular or lobar. In some cases, however, there may be no evidence of consolidation.

In the cases reported by Leichtenstern, above referred to, the illness was similar. There was the great weakness and depression from the start and almost invariably a severe headache, but no cases had delirium. As a rule, there were no abdominal symptoms. The spleen was not found to be enlarged in any of the cases, thus contrasting with the Paris epidemic.

The period of incubation varied from one to three weeks in the Paris and Cologne epidemics. Warthin states that it is from seven to twelve days. The mortality is put at 37 per cent. The disease is said to be more severe in the elderly. Treatment is purely symptomatic.

Czaplewski made bacteriological investigations

cases of disease which came somewhat under my own observation in Wolfboro, Carroll County, New Hampshire, in December, 1903. They were the patients of Dr. Nathaniel H. Scott, and were seen by me in consultation with him and Dr. Stillman P. Getchell, both of Wolfboro. No similar cases preceded or followed those about to be reported, which affected three out of four members of one household.

Mr. and Mrs. M. visited New York City in November, 1903, and while there they sent home to Wolfboro a green parrot, which arrived November 7. They returned one week later. The parrot had a bloody diarrhea and died November 21. It was kept in the sitting room occupied by Mr. and Mrs. M., and was cared for especially by their domestic, Mrs. J., and somewhat by

Mrs. M. The fourth member of the household was Mr. J., the husband of the domestic; but Mr. J.'s work kept him throughout the day away from home, while the head of the house, Mr. M., spent much time in the room where the parrot was.

Case I.—Mrs. J., a young woman of previous good health, was taken ill suddenly November 25, eighteen days after the parrot arrived and four days after it died, with prostration, pain in the right scapula, a temperature of from 102° to 103° F., vomiting and constipation. The temperature was about 103° F. for a week, then was normal three or four days, and rose again, remaining elevated for a week, and finally terminating by lysis, with the slow recovery of the patient. There was no cough.

Case II.—Mr. M., aged sixty-two years, once had a severe attack of typhoid. His habits and general health were good, but eight years ago he suffered severely from prostatic trouble, complicated by an abscess in the scrotum, which caused destruction of both testicles and was followed by apparent atrophy of the prostate gland, with considerable relief of the bladder symptoms. For some days previous to his present illness he had seemed languid. On November 29 he was obliged to go to bed with a temperature of between 103° and 104° F. and a pulse of about 100. He was first seen by me December 11, when his temperature was 103° F. in the afternoon, with a pulse of 104 and a condition, according to Dr. Scott, much more favorable than some days before. The leucocyte count was 8,640. The tongue was rather dry but clean. The respirations were about 28 per minute, and there were no marked pulmonary symptoms. The walls of the radial arteries seemed calcified, and the aortic second sound was accented. When seen by me again on December 16 the white count was 5,780. There were moist râles in both bases, especially posteriorly, with slight dulness and diminished respiration in the lower part of the axilla and back, on the right side; but no bronchial respiration could be detected. The throat contained a thick, viscid, and almost membranous secretion. He had been rather worse since December 11. He was somnolent and had Cheyne-Stokes respiration. On December 23 he was again seen by me and seemed to be slowly improving, but on the seventeenth he had a severe chill with great prostration, and on the eighteenth two similar attacks. These, however, seemed to be referable to cystitis, with offensive, purulent urine, which improved upon the administration of urotropin, with gradual and permanent convalescence.

Case III.—Mrs. M., aged sixty-seven years, had a family history of apoplexy and diabetes. The patient had been ageing rapidly in the last two years. She fell ill November 27, and was seen by me December 11. There was high fever and delirium, with constipation. The leucocyte count was 13,200. The pulse was 120 per minute, and Dr. Scott stated that it had been growing

progressively weak and rapid. The chest was full of moist râles, which in some places seemed high-pitched, but no distinct consolidation could be made out. The abdomen was soft; no enlargement of spleen or liver could be detected, either in her case or that of her husband. Within a day or two her condition became still worse, but it was improved by a purge, and by the injection of normal saline solution with adrenalin. On December 16 the white cells numbered 8,960. There was a white deposit in the mouth and throat which proved to be thrush. While moist râles could still be heard in both lungs, they were fewer than five days previously, and now coarse dry râles were audible. The heart was stronger. From this time she improved quite rapidly. On December 11 and December 16 the Widal test proved absolutely negative in both Case II and Case III. On December 16 paratyphoid and paracolon tests were likewise negative.

The general aspect of the case should be mentioned. It was well described by Dr. Scott and Dr. Getchell, when I first had the honor of meeting them, as being more like typhoid than anything with which they were familiar, but yet probably not typhoid fever. Temperature charts of both Mr. and Mrs. M. accompany this report. No eruptions developed in either case.

With regard to the etiology. As has been said, no similar cases existed in the village. The sanitary condition of the house had been brought into question. It occupied an elevated and healthful location, but the plumbing was defective. The pipe leading from the kitchen sink to the cesspool, into which all the waste material of the house was drained, had no trap, and furthermore, it did not reach to the surface of the water in the cesspool, so that there was a free access of the air from the cesspool into the kitchen; but there had been no change in the plumbing for three years, and for months a peculiar smell had been noticed occasionally in the kitchen.

Conditions such as these are highly undesirable, and they do promote illness by depressing the general condition of the occupants of the house and rendering them vulnerable to specific infectious agents, but it seems unlikely that they can account for so explosive an outbreak in persons who for several years were accustomed to them.

If Mr. and Mrs. M. brought some infection with them from New York, it is difficult to explain why the domestic fell ill before they did. Moreover, influenza, the likeliest disease to be considered, has usually an incubation period of two or three days, while they returned eleven days before the first illness occurred.

The advent and demise of the parrot were not known to me until my second visit, December 16. I then invited the cooperation of my friend, Dr. Oscar Richardson, assistant in the Clinicopathological Department of the Massachusetts General Hospital, and his report is as follows:

Bacteriological Report.

At the request of Dr. Vickery, I made, in December, 1903, examinations of blood taken from the cases which are described in his paper.

The blood examined came from Mr. J. H. M. and Mrs. J. H. M., and was subjected to the following agglutination tests. The blood from each case was added to the bouillon cultures, twenty-four hours old, of a known typhoid bacillus and a known paratyphoid bacillus, in the proportions of one of blood to ten of culture, and observed for half an hour. On the expiration of the time of observation, all the tests were found to be negative, so that higher dilutions were not made.

A short time later more blood from each case was obtained and further tests made with different strains of typhoid bacilli and bacilli of the paratyphoid-colon group, but all the tests were negative.

Finally an agglutination test was made with a bouillon culture of streptococcus-like micro-organisms recovered from the spleen of the parrot associated with the cases under consideration, but this test, like the others, gave no evidence of any reaction.

Stained cover-glasses of the blood were also made and examined, but no malarial organisms were found, and the blood showed nothing worthy of note, except for a slight increase in the number of leucocytes. Cultures were made from the throats of these cases, but the growths obtained showed nothing unusual.

At the time when the cases under consideration were taken ill they had in their household a sick parrot, which finally died and was buried. As soon as this fact was learned by Dr. Vickery the parrot was exhumed, packed in a box and sent to the laboratory, where it was received on December 21, 1903. The bird had been buried for about a month.

At the autopsy, which was held immediately, the body of the bird gave forth no marked odor and outwardly showed nothing worthy of note. On section the viscera presented no demonstrable lesions, and the post mortem changes, which were well marked in the intestines, were not apparently so far advanced in the solid organs. The brain was not remarkable.

Cover-glasses were made from the heart blood, liver, spleen, and the marrow of the wing bones and stained with Löffler's blue and Wright's blood stain, but on examination no bacteria or other micro-organisms were found.

Aerobic and anaerobic cultures were made on blood serum from the following sources: Heart blood, liver, spleen, the marrow of the wing bones, and the brain. After forty-eight hours in the incubator at 37° C., the cultures showed no visible growth, with the exception of the aerobic culture from the spleen. This culture showed on the surface of the medium, one small, round, gray-white colony, and its water of condensation had a slightly cloudy appearance.

Microscopical examination of the cultures showed that no bacteria were present in any of them except in the aerobic culture from the spleen. The single colony in this culture was found to be a micrococcus morphologically and culturally like the streptococcus. The water of condensation of the culture from the spleen was found to contain a similar organism to that in the colony.

A guinea-pig was inoculated from a twenty-four-hour-old subculture in bouillon from the colony, but the animal remained unaffected after many days.

This streptococcus-like micro-organism found in the culture from the spleen is, therefore, regarded as having no etiological relation with the unknown cause of death of the parrot, and it is probably a contamination.

It is to be regretted that an examination of the parrot could not have been made about the time of its death, as it seems quite probable that by cultures and cover-glasses made then, any bacterium that might have been the cause of the possible infection of the bird would have been discovered.

These negative results of the various tests and examinations recorded above are disappointing, but they are of considerable importance in ruling out those diseases the atypic forms of which psittacosis resembles. [Here ends Dr. Richardson's report.]

To sum up, three occupants of one house are taken ill almost simultaneously and two nearly die of a disease corresponding fairly well to the descriptions of psittacosis, and not easily placed in any other category. The time elapsing after the arrival of the suspected parrot corresponds to the period of incubation in psittacosis. The milder attack of the young patient is according to the rule. The only member of the household who escaped illness has had little to do with the parrot, but is the husband of one of the patients, Mrs. J. H. M.

A personal visit to the dealer in New York from whom the parrot was purchased had no satisfactory result. In another shop which obtains its parrots from the same wholesale house, I learned that three employees had been ill this spring, two with pneumonia and one with an attack of grip.

REFERENCES.

1. Deutsche Arch. f. klinische Med., 1879, Bd. XXV, p. 53.
 2. Corresp. Blatt. f. Schweiz. Aerzte, 1879, No. 19.
 3. Deutsche Arch. f. klin. Med., 1884, Bd. XXXV; 1888, Bd. XLII.
 4. Leichtenstern. Centralblatt f. allgem. Gesundheitspflege, 1899, 18.
 5. Centralbl. f. Bakteriologie u. Parasitenkunde, 1896, 20.
 6. Lancet, 1897, p. 1058.
 7. Ibid., 1898, p. 1591.
 8. E. Macé. Traité de bactériologie, 1901, p. 408.
 9. Warthin. Reference Handbook of Medical Science, vol. VI, p. 779.
 10. Bulletin Acad. de Med., 1896.
 11. Compt.-rend. Soc. de biologie, December 30, 1898.
 12. Medical News, January 9, 1897.
- See, also, Nothnagel, Specielle Pathol. u. Therap., Wien, 1899, Bd. XIV, 1, p. 210.
Gould's Year Book of Medicine, 1898 and 1900.

THE DISTRICT NURSE IN HER RELATION TO CASES OF PULMONARY DISEASE.¹

BY ARTHUR WILLARD FAIRBANKS, M.D.,
OF BOSTON, MASS.

EXCEPTING the contagious eruptive diseases there is perhaps no class of disease with which you come more often in contact, in your district work, than the various affections of the lungs. A few remarks on these conditions, and the relation of the hygiene of the home to their treatment and prognosis may not be without interest to you in your work.

In perhaps no other form of illness is your opportunity for the accomplishment of much and lasting good greater than in cases of pulmonary disease. Nowhere in the domain of medicine today is the fight against ignorance and superstition as great as it is against the beliefs in regard to the class of cases of which we are speaking. Your share in this contest is a great and important one. By unremitting effort it is in your power not only by your work to greatly aid the physician in his attempt to relieve his patient, but also to prevent the occurrence of many a similar case of illness.

Let us first consider the single matter of *ventilation*. While a proper supply of fresh air, in other words oxygen, is a necessity for the well, if they are to remain well, it is all the greater necessity to the sick, if they are to recover their health. But it is obvious to you that in no form of illness is an adequate supply of oxygen so requisite as in pulmonary disease; and in no class of cases is the popular fear of fresh air so great as in these very cases. Here is therefore where the battle must be fought, and, by regulation and constant supervision of this factor alone, from the standpoint of both cure and prevention, your opportunity for good deeds is boundless.

In the majority of other affections we can do without the function of the organ affected for a greater or lesser length of time, in part at least. We may even take deliberate measures to restrict its action for the sake of the benefit derived from the rest so obtained. Even in the case of the heart, when it is diseased, we can to a certain extent quiet its action, so as to afford it relative rest. But through the lungs must constantly flow, day and night, in consciousness and in sleep, that vital current necessary to all animal life, that element essential to the welfare of every portion of the body.

Consequently, whatever the condition of the individual in whole or in part, the lungs must continue, without intermission, to perform their duty or death results. When, however, the organ itself is diseased it is obvious that its function must be more or less impaired. Important then as is a full supply of oxygen to the lungs in health; how much greater is that necessity when their function is impaired by disease. Since we cannot stop their action and give them rest while they

are recovering, and since we know that, crippled as they are, they cannot fully meet the demands of the body for oxygen, we must favor them all we can by furnishing them with as free and abundant supply of oxygen as possible, that they may answer this demand with a minimum expenditure of effort. The greater the involvement of the lungs by the disease, the greater naturally is the impairment of their function, and thus it happens often that the *best* we can supply of Nature's air does not contain sufficient oxygen to compensate for the diminished ability of the lungs to absorb it, and we are then informed by the increasing dyspnea and deepening cyanosis that we must furnish it in more concentrated form, or death will ensue.

We then, as you know, have recourse to the inhalation of pure oxygen.

Perhaps I cannot better illustrate the subject than by mentioning a case typical of those which you see in the work you are doing. A few weeks ago I was called to see a boy of about twelve years, who had been taken suddenly ill the previous night. I found the patient dull and disinclined to speak, except to complain of occasional sharp pain in the side, with high fever, labored breathing and moderate cyanosis. Examination proved it to be a case of lobar pneumonia. The room was small and perfectly dark, although there was bright sunlight outside. The one window was tightly closed, with blinds shut and curtains down. The single door opened into the kitchen in which there was a hot fire, and some clothes drying on a line, while on top of the stove was a frying-pan in full operation. The two windows of this kitchen opened on a narrow passageway. The atmosphere of this room may be imagined. When told what the illness was the mother remarked that she knew it was pneumonia "by the way he breathed." Yet here was her boy struggling for air, for the very element that her maternal solicitude impelled her to so carefully exclude. Solicitude it certainly was, for she made not the slightest objection, when the situation was explained to her, the bed turned, and the window opened liberally at the top, and to her faithful care in the following days the boy owed his life.

Apart from enabling the diseased lungs to do their work with as much facility as we can afford them, we also know that a blood well supplied with oxygen is furnished with effective ammunition in its war against the disease germs. This is an additional reason for pure air in pulmonary as well as other diseases. Then not the least consideration is the comfort afforded the sufferer. Sometimes the proper ventilation of a close stifling sick-room reacts on the feverish patient somewhat as does a light sponge bath in the case of a feverish restless child. Refreshing peace and sleep takes the place of fretfulness and unrest.

The subject of fresh air, however, brings us to a consideration to which we must come, sooner

¹ Lecture delivered to the nurses of the Instructive District Nursing Association, Boston, April 28, 1904.

or later, in everything we do in life. This is the subject of *moderation*. We must temper our acts with judgment in this as in all things. We must consider the case, our patient before all else. We must not fear to supply Nature's tonic in full dose when sure that it will be well borne. On the other hand we should not hesitate to protect our patient if our judgment warns us of harm. I cannot but feel that we have sometimes gone too far in our enthusiasm for fresh air and have occasionally forgotten that fresh air is not necessarily cold air. I think the pendulum of enthusiasm will swing back in time until it occupies a point not quite midway, but a little to the side of the present view, for it is certainly better to err on the side of too much fresh air than to sin in the other direction. I urge you strongly however, of the necessity of some care in the exposure of young children to too cool air. The younger the child the greater the need of caution. We must remember the sensitiveness of the mucous membranes at this period of life and especially in a class of cases of which I will speak later. The common fear of fresh air is really a fear of cold air and arises from the frequency with which disease is attributed to "taking cold." It is well to explain to the layman that the "taking cold" undoubtedly does diminish our resistance, and renders one more likely to contract certain diseases, such as pneumonia if we are exposed to it, but the disease once started is not made worse but materially better by the breathing of fresh moderately cool air.

The Temperature of the Sick-Room in Pulmonary Affections.—This is also a matter largely coming under your supervision and one of considerable importance to the welfare of the patient. In general it may be said that the temperature most suitable for other cases of illness is also that indicated for pulmonary affections. We shall find some variation necessary according to the nature of the case. An average of perhaps 65° F. is best, somewhat lower where there is high fever, sometimes a little higher in certain cases, as we shall see later. This matter of the temperature is closely associated with the degree of dryness of the atmosphere, a very important consideration in affections of the lungs, which we will notice more minutely in a moment. It should be borne in mind that in those cases where we desire the air to be moist and employ means to that end, the temperature of the room should be kept *considerably* higher than the above average.

Other things being equal, an atmosphere of higher temperature is capable of holding more moisture in suspension. In cases requiring a dry atmosphere we may have it warm or cool according to the means we employ to produce the dryness. We shall also see that the temperature most suitable for our pulmonary patient is materially modified by his age, by his state of vitality, and by the disease from which he is suffering. The young and the aged are much more sensitive

to cold air and especially to a *sudden reduction* in temperature than are the middle-aged. They not only acquire affections of the lungs and bronchi under these circumstances, but, when already afflicted, are much more likely to be made worse, or to suffer a relapse when convalescent. In these cases when for some special reason it is necessary to cool the sick-room, it should be done gently and gradually. *Evenness* of temperature in these cases is a desideratum. Into this same class must be placed also those of our ordinary patients whose vitality is reduced by disease. They become for the time being, amenable to the rule for the extremes of life.

Another important consideration ordinarily overlooked, I think, is the life to which our patient is accustomed. We should consider whether he has been accustomed to an active out of door life or whether he lives most of his time in overheated, poorly ventilated rooms. In the former instance his resistance to, in fact his need of cool stimulating air may be great. In the latter case, while his need may be equally great, his capacity of receiving the same is infinitely less. So here again the question of *rule, tempered with good judgment*, plays its part. There is a fact of much importance in connection with the temperature of the room, especially in affections of the lungs in children.

In the average room, even in well-built houses of the better class, the temperature *near the floor* is *considerable lower* than it is higher up in the room. This is all the more likely to be the case in the dwellings of the poor. Thus the little one sitting on the floor, or in a low chair, or when running about, is exposed to a different temperature than that of which you are cognizant judging from your feeling or from the reading of the thermometer higher up on the wall of the room. Not only is the air cooler in the lower strata of the room, but it is almost invariably in *motion*. The more windows and doors there are the more marked are the currents of air sweeping along the floor. In a sensitive child suffering from acute or subacute bronchial affections this fact becomes of prime importance. Many such children are not confined in bed but are up and about the room. In the middle of the forenoon or afternoon, the child becomes sleepy and is laid on the bed. As soon as the child falls asleep the mother is overpowered by the fear that he will "catch more cold" and usually covers him warmly. After an hour or two he awakes, often in a state of perspiration, and wishes to get up. The mother takes him up, and, busied with her work, puts him on the floor to play. With warm and relaxed skin he is immediately subjected to the cooler air and the drafts along the floor. He "gets more cold," the inflamed condition of the bronchi is still further perpetuated and days of gain are lost. A well child in this way often acquires a bronchitis, while the mother wonders how it happened when she covered her little one so solicitously while it was sleeping. I am con-

vinced that many colds and lung troubles are contracted by children in this way.

In the case of the aged with enfeebled circulation in the lower limbs, this same difference in the temperature and movement of the air may be productive of harm. This is a very difficult matter to control. In the case of the aged, if, as is usually the case, they must sit most of the time quietly in a chair, much of the harm may be obviated by having them use a chair of rather more than the average height, and rest their feet and legs on a support of nearly similar height. When it becomes necessary for change of position to place the feet on the floor, a light shawl should be wrapped about the feet and legs. The best place for children is the bed if the affection is acute, or if a child during convalescence continues to have exacerbations of the affection.

The problem of perfect ventilation is far from solved even in the most modern homes.

I have already referred to the degree of *humidity* as a factor of importance in diseases of the lungs. This factor in the homes you visit varies even more than the temperature. In the one case your patient is subjected to the torrid and humid atmosphere of the family kitchen, surcharged with the steam from the wash-boiler, and tubs, or the cooking dinner. In another case, in a little room more remote from the constant heat of the kitchen, our poor sufferer lies or sits in an atmosphere completely deprived of the moisture it *normally* should contain, by an air-tight stove or a charcoal burner or similar contrivance, while occasionally in some favored family able to afford the luxury (?) you find the atmosphere made utterly irrespirable by a gas stove. All of this variation of course irrespective of the type of disease from which our patient is suffering. You may judge the effect of the former state of affairs on a poor sufferer with bronchial tubes filled to overflowing with excessive secretion; while you will surmise that the atmosphere last described is not the one most soothing to our patient with his bronchi inflamed and swollen and dry, devoid of even the moisture they should normally possess.

In the case first described, if you cannot move the patient you had better have the tubes removed and the dinner cooked under the auspices of a charitable neighbor, if one can be found. That is, of course, if the family submit. If not, there is nothing you can do, except to pray that your patient may recover in spite of his friends. In the case that is being slowly dried fortunately the requirements of the situation are more easily met. Here you can take a tea-kettle, or any available receptacle, partially fill it with water and set it on the stove, thereby giving the thirsting bronchi welcome relief. Thus you see again there is a happy mean, in this as in other respects, which we should follow until we find that the particular character or stage of the disease demands more than the normal or less than the normal degree of moisture in the air the patient

breathes. We shall find that sometimes it is necessary to surcharge the air with water vapor while in another instance we must subject the patient to a dry atmosphere. This is something the physician must direct, but until he does so it is for you to keep the air of the sick-room as near the normal as possible.

There is one other factor of the atmosphere of the greatest importance in lung affections, and this is its degree of *contamination by injurious gases and dust*. In all affections of the bronchi and lungs the very keynote of treatment is to remove all source of irritation from the air that, when breathed by the patient, must pass over the sensitive and inflamed mucous membrane. Yet in many of the homes into which you go the conditions are in the highest degree unfavorable to the attainment of this end. Not only do improper stoves fill the air with noxious gases, but ignorance in the use of even suitable apparatus is widely a source of injury, even among the supposedly more intelligent class. Then within a city's limits, with clouds of dust from the streets and the air filled with soft coal smoke, it becomes a matter of the greatest difficulty to shield our patient.

In the home itself, while often other forms of dirt are blissfully tolerated, a little dust resting for the time being at least harmlessly, is whisked into the air with a duster or a broom. No real thought of its *removal* is entertained. It is quite sufficient if it is sent into the atmosphere, to settle down after a time somewhere else, in a thinner, and consequently less visible, layer. Some of us I am sure have lived through the experience of seeing a chair, in anticipation of our occupation, hurriedly dusted off with a cloth infinitely more dusty than the chair, thereby sending our patient into an attack of coughing, to show us how much he was really capable of suffering without complaint. With dust teeming with bacteria, you may easily appreciate how a bronchitis of mild degree and with comparatively clean mucus secretion is converted into a severe purulent or even fetid form. There is also the danger of implanting in a lung whose vitality is impaired by the comparatively simple inflammation, disease germs of a much more serious form. Never permit a room to be dry swept or dusted while occupied by a pulmonary patient.

The *diet* in affections of the lungs should be, as for the well, the most nutritious obtainable, and of some variety, except in the presence of fever, when the rules as for any fever prevail. In such cases with the light liquid diet may be used the demulcent drinks mentioned later.

In acute cases, and especially in the later stages of convalescence and in subacute cases, the bronchial affection is but a part of a general depression in the function of the mucous membranes; and the stomach and intestinal tract suffer as well as the bronchi. Therefore in these cases there is frequent loss of appetite and inability to digest ordinary food.

Bathing.—If properly done and with certain precautions as to temperature of water and room, baths cannot be objected to, with the exception of very acute cases of bronchitis and in the aged or very feeble patient or where some exceptional feature of the case renders the amount of disturbance involved by the bath unwise, as for instance in cases with a tendency to pulmonary hemorrhage. After a bath, whether sponge or full bath, it is beneficial to warm the extremities by wraps if the patient is up, or by hot water bags if in bed. The temperature of the water used will depend somewhat on the particular features of the case, the age, the presence or absence of fever, etc. The temperature of the room in which the bath is taken should be comfortable, without drafts, and *especially not too warm*.

The mistake made by the layman is the taking of the bath in a close and overheated room. The effect under such circumstances is profuse perspiration and it is from this fact and not from the bath that he "takes more cold." Be especially careful in this respect where, as is occasionally the case in certain pulmonary cases, cold baths or cold sponging of the chest are ordered. It should be done in a *cool room*, the drying and the dressing accomplished as rapidly as possible, the clothes being slightly warmed. If you do not take precautions to have these rules observed, the very fact that he is to use cold water will induce the patient to take the bath in an overheated room and very probably he will take it as near the stove as possible. The effect of such a bath is *exactly the opposite* of that intended. The reaction of the cold water which, after the skin is dried, should consist of a warm dry glow, is followed on the contrary by a profuse perspiration so that the skin is moist and warm as the patient dresses, and this is succeeded by chilly sensations and cold extremities, and "more cold is taken" as he says.

Medicated baths are sometimes indicated in pulmonary affections of a chronic nature. The most useful perhaps and possibly the only one available among the class of patients with whom you are dealing is the salt bath. This is best made by using sea salt, obtained by the evaporation of sea water. It may be procured very cheaply. The bath may be a warm full bath, taken at night, or cool salt water sponging may be employed in the morning. The former is preferable I think. These baths are very useful adjuncts to the other methods of treatment in certain bronchial affections.

Massage is occasionally useful in certain affections of the lungs. It may be employed over the chest and accessory muscles of respiration to increase the power of expansion of the lungs. It may be used generally to assist the circulation or over the muscles of the extremities to diminish the impairment of muscular power incident to confinement and disuse. It is especially useful in conjunction with the baths in certain affections of which I will presently speak.

Inhalations, the superintendence of the administration of which usually comes within the province of the nurse, are used with great advantage in pulmonary disease. Steam impregnated with the vapor of creosote, turpentine, terebene and benzoin, oil of pine, eucalyptol, thymol, chloride of ammonium and iodine, is used. This is accomplished either by placing some of the substance in a vessel of water which is kept steaming or boiling over a stove or lamp, filling the atmosphere of the room with moist medicated vapor; or some may be placed in a pitcher or bowl of hot water and inhaled directly. In the latter case I have found a cone made of a newspaper and placed with the large end over the pitcher, and the small end over the patient's mouth, a very useful and practical expedient. Finally the medicated vapor may be obtained from a steam atomizer, where one can be afforded. Use the above mentioned substances in the following strength:

R Creosote	½ to 1 dram to the pint of water.
Carbolic acid	½ dram to the pint of water.
Camphor (spt. camph.)	1 dram to the pint of water (at 140°).
Terebene	½ dram to the pint of water.
Turpentine.	
Eucalyptol	} ½ dram to the pint of water.
Thymol	
Benzoin (tr. comp.)	
Oil of Pine.	

If to the latter substances, after they are placed in the water, is added, a dram of light carbonate of magnesia, the diffusion will be aided.

The chloride of ammonium may be used dry by heating a little in a spoon over a lamp. The camphor and the terebene are best used in the pitcher or bowl by direct inhalation.

The inhalation of oxygen will be mentioned in connection with pneumonia.

Counter-Irritation over the chest is sometimes very useful in affections of the lungs. It takes the form of stimulating liniments or poultices. These contain slightly irritant substances that dilate the small blood-vessels of the skin and probably stimulate reflex nervous action; in these ways influencing the circulation and the capacity of the smaller bronchi and air cells. Heat, it should be remembered, acts in this way. The liniments usually contain ammonia, camphor, turpentine, capsicum, cinnamon or similar substances. The poultice may be made of flaxseed or wheat flour mixed with mustard or other spice. Some care to avoid blistering is requisite, especially in the case of children. If the flaxseed poultice is large, mustard may be added to the amount of one or two tablespoonfuls, in which strength, unless the skin is very sensitive, it may be left on some hours.

A good poultice for the chest of the young child may be made by mixing mustard with wheat flour in the proportion of one to twenty and then making it into a paste. This will usually redden the skin without danger of blistering it. A heavy poultice should never be applied to the

chest, especially when there is difficulty in breathing. A few drops of oil over the surface of the poultice will prevent its adhering to the skin. A piece of very thin paper placed between the poultice and the skin will do the same and enable the poultice to be applied hotter, and aid in the retention of the heat. Tr. iodine is sometimes painted on parts of the chest as a counter-irritant and is sometimes useful. When used it should be painted over a small area until the skin is dark and then not applied again over the same area.

We come now to the mention of certain substances used *ad libitum* in the form of drinks in bronchial affections. With the supervision of the preparation of these demulcent preparations the nurse is naturally entrusted. They are very useful adjuvants to the more vigorous treatment and it has been my experience that ignorance of the preparation of these simple but useful preparations is almost universal among the poor of our cities. These drinks are so inexpensive that they are universally accessible. They are made from starchy or gummy substances. Among these may be mentioned: Flaxseed, althea or marshmallow, gum arabic, slippery elm, arrowroot, licorice, Iceland or Irish moss, and the ordinary starch gruels, *made thin*, such as barley or oatmeal. Some practical directions for the preparation of these drinks may, I think, be useful to you.

Flaxseed Tea.—Pour a quart of boiling water over four heaping tablespoonfuls of whole flaxseed, cover lightly and allow it to steep on the back part of the stove for four hours. Then strain through linen. Flavor with lemon, and sweeten if desired.

Marshmallow Tea.—Take two ounces of dried marshmallow root and one ounce of good raisins; add five large cupfuls of boiling water and boil down slowly to one half. Strain without using pressure. These amounts may be doubled (making twice the quantity) if it proves acceptable to the patient.

Slippery Elm Tea.—Pour a quart of boiling water on two ounces of slippery elm bark; cover lightly and allow it to stand near the fire for three hours. Strain.

Arrowroot Tea.—Mix thoroughly three tablespoonfuls of arrowroot with two tablespoonfuls of white sugar and the peel of a third of a lemon; add a pinch or two of salt and a quart of cold water. Set on the fire and boil for a few minutes.

Gum Arabic Water.—Take a quarter of a pound of white gum arabic, a quarter of a pound of rock candy and a large thinly sliced lemon. Pour onto this a quart of boiling water and, constantly stirring, keep it in a warm place until the gum is dissolved.

Irish or Iceland Moss.—Wash half an ounce of the moss in cold water. Put it into a quart of water and boil gently for fifteen minutes, then strain and sweeten, and flavor with lemon, or white wine may be used if available. All of these preparations may be taken freely and frequently

during the day. For use in bronchial or throat affections they are better when taken hot, or warm at least.

To the flaxseed tea licorice may sometimes be added with advantage, in the proportion of half an ounce of the bruised licorice root added before the water is poured on; or two teaspoonfuls of the powdered licorice, to the above quantity, added after the tea is made. Gum arabic may also be added to the flaxseed tea if desired. It should be added after the tea is made. The whole gum should be used, *not the powdered acacia*.

We will now briefly consider some of the more common of the pulmonary diseases with which you meet, and that portion of the treatment which may come within a nurse's duty.

Of all these affections, bronchitis in one of its various forms is the most frequently met with. In these cases it is for you to see that the temperature of the room is that proper for this class of case, taking into consideration the age and vitality of the patient, and that, once established, this temperature is kept even, without sudden and unnecessary fluctuations; that the room is not laden with moisture or its atmosphere dried to the point of suffocation; that the diet is simple and nutritious; that proper clothing is worn, especially that the *feet and legs* are kept warm and dry. If pain and soreness in the chest becomes troublesome, as is not infrequently the case, it will devolve upon you to superintend the preparation of a poultice or the application of a liniment. If baths are required, for medicinal reasons in any case, or for cleanliness in cases of some duration, it becomes your duty to see that they are properly employed with due regard to the precautions mentioned under this head. In very acute cases baths should as a rule be avoided.

In cases *with much restlessness and exceptionally high fever* a light sponge bath, with a little alcohol added to the water, will not be objectionable, in these acute cases, and will prove grateful and quieting, especially with children. Such baths should be given under your personal supervision, however. Finally, you may greatly assist in the relief of these cases by preparing, or directing the preparation of, one of the demulcent drinks mentioned above. Inhalations are used with great benefit in these cases and may be prepared as already described. Sedative remedies such as benzoin, in the form of the compound tincture, are perhaps more universally beneficial, but sometimes the more stimulating vapor of turpentine is required, or the stimulating and antiseptic action of creosote is useful, especially in chronic or subacute cases.

Chronic bronchitis, as met with in these homes, is one of the most intractable of diseases, and usually requires for its successful treatment a complete revolution in the patient's mode of life. This you can rarely bring about, and it remains for you to approximate success, as nearly as possible, by attempting to secure the cooperation of

the patient and the members of his family in the observance of the "hundred and one" little details of personal and general hygiene, in the faithful observance of which, in conjunction with the special treatment, success is *alone* to be obtained. Perhaps the most pathetic and trying among these cases are those seen in children; chronic or sub-acute cases that linger for weeks or months; defying all our efforts to relieve them under the stubbornly unfavorable conditions of the home; until some kind fairy carries the little one off on "Country Week," removes the handicap under which it has been struggling, drops it down in the midst of green grass, warm sunshine, pure air and food; and light returns to the eyes, and color to the cheeks, and rest to the tired lungs.

While these children are at home they must be protected from dust; they must have pure air to breathe, day and night, but they must be shielded from strong cold winds and sudden extremes of temperature; they should be out of doors while the sun is high and warm, but they should not be exposed, as a rule, to the cool damp air of evening; they should not be allowed when once in bed, to get up and run to the door or windows, as is frequently the case; the under clothing should be of wool, of medium weight *not heavy*, except in the very hottest weeks of summer, when cotton, preferably with small admixture of wool, may be substituted, the feet especially should be kept dry and warmly clad; the food simple and nourishing, and above all properly prepared. Unless some exceptional reason to the contrary exists, these cases are much benefited by salt baths; warm full and fairly strong salt bath at bedtime and a sponge off in the morning with cool, but not cold water, with a small amount of salt added. This should be done only with the consent of the attending physician, since there may be some reason in the individual case why the procedure would not be advisable.

Chronic bronchitis in patients well along in years, is frequently associated with an emphysema, a relaxation and dilation of the air cells, frequently accompanied by a spasmodic constriction of the small bronchi. This causes great distress in breathing, which is at times very difficult to relieve. Systematic compression of the lower half of the chest, on each *expiration*, over a period of ten minutes three or four times a day, will give these cases a certain amount of relief, in addition to the other treatment. Some relative or friend may be taught to do this very well. Massage of the chest and the respiratory muscles is also sometimes beneficial. In conclusion we may repeat that the element of dust in the atmosphere must be as far as possible eliminated, in every case of bronchitis, in every stage of the disease.

Constipation sometimes incident to the disease and at other times dependent upon the astringent effect of sedative cough mixtures, must be relieved by simple laxatives.

Pleurisy.—The feature which you are some-

times called upon to relieve in this condition, in the absence of the physician, is pain. The sharp pain in the side characteristic of this disease in some of its stages, may be relieved by a small mustard poultice over the site of pain; or tincture of iodine may be painted over the spot. If these measures do not relieve it the pinning of a towel or band tightly about the chest is sometimes effective, or better still an adhesive plaster band around that half of the chest will give relief.

Acute Pneumonia.—In no disease must the nurse be more vigilant than in this. There is not so much left to her own initiative, however, in this disease as in some other pulmonary affections, but she must constantly watch for the signs of pulmonary or cardiac failure and be ready to meet them with the administration of oxygen and the usual stimulants. Deepening cyanosis, increasing difficulty in breathing and the supervening of stupor or coma, are indications for the use of oxygen. Preferable to the use of the mouth-pieces coming with the inhaling apparatus is an ordinary glass funnel, of a size dependent upon the age of the patient. The oxygen should be allowed to flow out, as indicated by the water-bottle, quietly and steadily, not violently and wastefully, as I have seen it used. The pain of the initial stage is due to pleurisy and may be somewhat relieved by the application of hot poultices. They should never be large and heavy. Other methods of relieving the pain, such as cupping, or the administration of morphine which sometimes becomes necessary, would hardly be done except by direct order of the physician. If fever is high and delirium is present an ice-cap may be employed.

Acute pneumonia, being a disease of comparatively short duration, we do not usually mind a temperature of considerable degree, provided the patient is in otherwise fair condition. It occasionally becomes necessary, however, to reduce an excessively high fever, which in itself seems to threaten our patient's welfare. This we attempt to do by a cold sponge and, in the absence of effect from this, we may use the cold-pack. Only very rarely should the cold full-bath be employed. For children a hot full bath at 105° F. with a few handfuls of mustard added to the water may be used with benefit. The child should be taken from the bath and, without being dried, is immediately wrapped in a blanket. Profuse perspiration usually occurs and is often followed by restful sleep.

At the end of a pneumonia, during the crisis, when the dyspnea is relieved and the temperature is falling, a period sometimes comes when the heart, which previously has perhaps been working manfully against great odds, fails. Then is the time when the nurse is often called upon to act quickly, intelligently, and vigorously, to rally the failing forces of life. Subcutaneous injections of atropine, nitroglycerin or strychnine in full doses are indicated, and alcohol and caffeine by the mouth. In the case of a child a hot bath

may be given under these circumstances and aromatic spirit of ammonia given by the mouth. A very good stimulant for hypodermic use in children in cases of extreme collapse is ten minims of a solution of camphor 1 in ether 10.

Occasionally changing the position of a patient, will sometimes give much relief to the breathing, and in young children, who do not invariably think to take the posture most comfortable for them, should always be borne in mind by the nurse. It should be remembered that pneumonia is an infectious disease and under certain conditions may be transmitted from one person to another. The sputum should be carefully cared for, and it is an excellent plan to disinfect it as you would tuberculous sputum.

Tuberculosis of the Lungs.—In the world's battle against this treacherous foe you are now taking, in your district work, an active part. It is hardly necessary perhaps to enter into the details of the defensive and offensive methods of warfare waged against this disease. Knowing the source of danger, the lines of defense become fairly well defined and, as might be supposed, are more readily carried out than measures directed toward the subjugation of the disease, once it has invaded the system. Defense of the individuals living in the immediate environment of the source of the tuberculous contagion must be regarded as the first and most important duty of every worker in the army moving against this "great white plague." The victim must be given a bed to occupy alone, and, where possible of course, a room by himself. The sputum should be collected with most scrupulous care. If the slight expense of the folding paper cups with which you are doubtless familiar, is an insurmountable obstacle to their use, an ordinary cup containing a little of a five per cent. solution of carbolic acid solution is perhaps the next best thing. This can be used at home. When on the street small pieces of cotton or tissue paper may be used and placed in a rubber tobacco pouch, which is emptied into the fire on the return home, and the pouch thoroughly scalded and kept for use again. A handkerchief should never be used for any such purpose. The patient should be instructed to hold a handkerchief before the mouth during an attack of coughing, to avoid the diffusion of fine particles of sputum through the atmosphere.

As to the degree to which these precautions are carried out much will depend on your watchfulness and continued admonitions to the patient and those about him; and much, very much, on the character of the patient himself. We must be patient with him. We must not forget that we are demanding from him an expression of the noblest attribute of human kind, the highest of which the human character is capable; the thoughtful, self-forgetting consideration of others in the hour of personal weakness and suffering. Often, however, your hardest battle will be with those you are striving to protect. Affection for the afflicted, the noblest of excuses, will lead to

constant and unnecessary violation of those little but potent rules of hygiene on which so much depends. And this brings us to a fact which for several years deterred many who understood the situation from taking active measures against the ravages of this disease. This was the dread lest the general inculcation of the doctrine of the contagious nature of the disease should alienate from the victim even those nearest and dearest to him. Were there ever a danger of such an occurrence, it would be due to the way we taught the truth and not to the truth itself. We must explain to the individuals of the household, that while tuberculosis is a communicable disease, it is not so in the degree in which the majority of other infectious diseases are communicated. Since we cannot exactly foretell the intimate conditions of the system that render it susceptible, certain reasonable precautions are wisely taken against wholesale and entirely unnecessary admission of the germs into the body.

With all possible precautions observed there still remains a certain element of danger for those in constant association with the patient. This danger we can greatly diminish by so fortifying the system with well cooked, nourishing food, fresh air and hygienic measures, as to render it unlikely to be receptive to invading germs.

Here we shall often be greatly handicapped by the bad habits or unhealthy occupations met with among the class of which we are speaking. We can but exert ourselves to the utmost and do the best we can. Accustoming the people to cold morning baths, to regular and sufficient sleep, to the avoidance of colds and bronchial affections, by the wearing of suitable clothing and by the maintainance of dry and warmly clad feet, will all aid in neutralizing these unfavorable conditions. We must not become discouraged by individual instances where all our efforts appear in vain, for the steadily declining death rate, in spite of the modern methods of diagnosis which ensure the certain recognition of all cases of the disease, tells us we are fighting a slow but winning fight.

In the treatment of the victim himself a maximum amount of the most nourishing food, plus fresh air, in as large doses as can be obtained, is imperative. As important as the character of the food is its preparation. Sufficient and regular hours of sleep must be instituted. Unfortunately it is often impossible to obtain the cooperation of these patients in their home, and I personally am becoming more and more convinced that the only hope for them lies in sanatorium treatment. And even in those slight cases that are at present the only ones accepted in our state sanatorium, the marked improvement almost invariably shown is ultimately lost if they return to the life of their homes again. This is especially the case with those moderately pronounced cases, too far along to gain admission to the sanatorium, but really in a favorable stage of the disease, provided the proper conditions of life could be secured for the

patient, and always maintained. These patients we may sometimes succeed in sending to the numerous boarding houses at Rutland where the life of the sanatorium is inculcated, and even enforced. The improvement shown by many of these patients is incredible to one who has not witnessed it, and yet I regret to say that again and again I have seen that gain in weight and color, in buoyancy and hope, melt away far more rapidly than it came, on a return to the life at home. I do not believe therefore, that it is wise to induce false hope in these patients by sending them to live for a time under such circumstances, unless there is some probability of their being able to fairly approximate that favorable life during their entire existence.

There are certain symptoms in consumptive cases which it often falls to the lot of the nurse to alleviate, and certain emergencies which chance sometimes orders her to meet. Of these we will now speak. Many of these conditions are of course, strictly speaking, within the province of the physician, but since this is a chronic long continued disease, not receiving frequent visits from the physician, you will often be called upon to relieve the temporary distress of your patient. This may often be done by simple means; applicable without harm to any case, and not involving more radical measures which you would rightly hesitate to employ. The cough, usually a marked feature of the disease, sometimes becomes, by its great excess, a source of much distress and fatigue to the patient. Where the expectoration is abundant the cough is of course necessary for its removal, and no radical measures should be employed to stop it unless the excessive secretion is checked. However, these are not, as a rule, the circumstances under which the cough is distressing. It is where the cough is dry and racking, far in excess of the expectoration, that the greatest distress occurs. Any of the demulcent drinks above mentioned may be given freely and often with benefit, especially if given hot. A small but strong mustard or spice poultice over the upper portion of the sternum may do much to give relief. Painting the spaces above the clavicles with tincture of iodine will sometimes relieve the excess of cough. A hot mustard foot-bath with hot drinks will give relief, especially in the cough that is often very troublesome when the patient first gets into bed at night. This is a very common occurrence. It may be avoided usually by warming the bed previous to the patient's retiring. Inhalations such as have been described in connection with bronchial affections are frequently of great benefit in excessive irritating cough; especially creosote. The excess of cough in individual instances is sometimes due to pleurisy, even where there is no pain. After all other means have failed therefore, the binder or plaster strip may give some relief.

The pain in consumptive cases is usually due to pleurisy and is to be dealt with as with pleurisy from any other cause. Night sweats are often

a source of much discomfort. When excessive this symptom usually requires internal medicinal treatment. Some relief may be given, however, by sponging the patient with vinegar, or dilute acetic acid and water, *equal parts*, may be used. Alum dissolved in alcohol in the proportion of half a dram of the alum to the pint of alcohol makes an efficient lotion for the same purpose.

The patient should wear a light weight flannel nightgown which absorbs the moisture better than linen or cotton and is therefore much more comfortable. Fever, if reaching each day to 101° F., or over, should be treated by rest in bed. It is however no contraindication for fresh air, provided the same can be obtained with the patient at rest.

Hemorrhage from the lungs is an emergency which anyone, physician, nurse or layman, may be called upon to meet at any time, not alone in the visibly sick but in the apparently well individual. First and foremost of the measures employed to meet the crisis must be absolute physical and mental rest. Put the victim to bed and isolate him from all disturbance. Cracked ice by the mouth may be given. The cough and the peculiar nervous restlessness often seen in these cases must be relieved by a small hypodermic dose of morphine. Ice may be applied to the upper part of the chest, just under each collar bone. The subsequent care should consist in a light diet, a laxative each day sufficient to freely move the bowels and a continuance of the absolute physical rest many days after the cessation of the hemorrhage. In profuse hemorrhage it is useless to attempt the inhalation of astringent substances. Where the bleeding is slight, a spray such as the following may be tried: Take alum, six grains; water, three ounces, or Monsel's Solution ten drops in two ounces of water. Both are to be used in a hand atomizer. A teaspoonful or two of the fluid extract of ergot may be given internally, immediately, but the remedy that promises most relief is the extract of the suprarenal gland; and so important is every moment in meeting severe hemorrhage that I think it an excellent plan for a nurse who is working with many phthisical cases to carry a few tablets, or some of the powder, with her. It is given in the dose of three to five grains and is to be placed dry on the tongue and not swallowed but held in the mouth and allowed to dissolve. It may be repeated every thirty minutes, for three or four doses if necessary. Do not give stimulants in pulmonary hemorrhage. In closing the subject it may be added that in the case of any pulmonary disease it is an excellent plan to disinfect the expectoration or to exercise care against its dissemination broadcast by the patient. It has been found that many cases of bronchitis, even when semi-chronic, are due to the influenza bacilli, and there can hardly be a doubt that from such individuals epidemics of acute influenza may originate. In other cases other organisms are present, some of which, especially the streptococci and the

pneumonia organisms, are a constant menace to the well and may give rise to other than pulmonary disease.

MEDICAL PROGRESS.

PHYSIOLOGY.

The Effect of Caffeine upon the Vagus Center.—In small and medium doses intravenously injected into dogs, caffeine, stimulates the vagus center, according to G. SWIRSKI, (*Pflüger's Archiv*, August 22, 1904). This is, however, an inconstant phenomenon, failing in forty per cent. of the cases. The fall in blood-pressure brought about by small intravenous injections of caffeine, is caused by a lowering of the tone of the vasomotor center by reflexaction, without the aid of the depressor nerves. The blood-pressure-raising action of caffeine is in greatest part due to a *direct stimulation* of the vasomotor center in the medulla, and to a less degree of the centers in the spinal cord. Large doses of caffeine in dogs had no appreciable effect in the heart muscle.

The Activities of Zymase and Endotryptase in Killed Yeast Cells.—The juice expressed from yeast contains a sugar-splitting ferment (zymase), a proteolytic ferment (endotryptase), and in addition inverting, diastatic reducing, and other ferments. T. GROMOW and O. GRIGORIEW (*Hoppe-Seyler's Zeitsch.*, August 17, 1904), in an investigation of the various conditions which affect the workings of zymase and endotryptase, discover a number of facts of eminent importance from the general standpoint of the physiological significance of ferments. Killed yeast cells are found in commerce under the name "zymin," which possesses all the characteristics of live yeast except the power of growth and multiplication. Its proteolytic ferment, endotryptase, is a powerful one, whose action is strongly inhibited by saccharose, glucose, lactose, mannite and glycerin. The more concentrated the solution of saccharose, the greater is its inhibitory action. This inhibition of the above substances is in all probability favorable to the synthesis of proteids; the decomposition products of albumin inhibit the further destruction of the latter. Saltpeter and calcium chloride stimulate the action of endotryptase, while quinine and alcohol inhibit it. Substances which inhibit the latter, stimulate the action of zymase, while those that accelerate the work of endotryptase, inhibit the activity of zymase.

Inhibition of the Action of Physostigmine, by Calcium Chloride.—The study of drug antagonism is valuable from the standpoint of physiology as well as therapeutics. S. A. MATTHEWS and O. H. BROWN (*Am. Jour. of Physiol.*, October 1, 1904), have made an important contribution to this subject. They allude to the results obtained by Loeb in preventing by means of calcium of trontium chloride, the marked muscular twitchings produced by sodium citrate, tartrate, oxalate, phosphate, and barium chloride, when injected into the lymph spaces of the frog. MacCallum has shown that the marked intestinal peristalsis produced by many of the above salts, in mammals, can be inhibited by the injection of calcium chloride. Fisher found that the glycosurin produced by electrolytes is inhibited by a sufficient amount of calcium chloride. The antagonism between atropin and pilocarpin, atropine and nicotine, and atropin and physostigmin is also alluded to. S. A. Matthews has shown that the convulsions produced in tetanus are inhibited by an intravenous injection of a combined salt solution in which

calcium chloride is present. The authors investigated the effect of calcium upon the action of physostigmin, in dogs. They found that the action of the latter drug in producing, (1) the contractions of the intestine, and (2) the tremors of the voluntary muscles, is counteracted and inhibited by calcium chloride; (3) the increased salivary secretion is, at least partly, counteracted and inhibited by the calcium chloride.

The Activating Substance of the Pancreas in the Metabolism of Carbohydrates.—In 1903 O. COHNHEIM found that the muscles of dogs and cats contain a glycolytic ferment, which in itself is inert but is rendered active by means of the pancreas. The author (*Hoppe-Seyler's Zeitsch.*, August 17, 1904), has succeeded in isolating the principle of the pancreas which is responsible for the activation of the glycolytic ferment of the muscles. This pancreatic constituent is not affected by boiling, is soluble in water and 96 per cent. alcohol, but not in ether, and in this account is to be distinguished from proteids, ferments and, above all, from most of the constituents of the pancreas. The solubilities of the pancreatic activator, its resistance to boiling and its solubility in alcohol, show that it is no ferment, and place it in the same rank with the other and better known internal secretions, namely, adrenalin, iodothylin and secretin. As regards the behavior of this pancreatic activator, the surprising fact is revealed that if to a constant mixture of muscle-juice and sugar, increasing amounts of pancreas be added, the action of the latter at first increases and then diminishes. This is the case whether one use the entire pancreas, the alcoholic extract of boiled or unboiled pancreas, or alcoholic extracts of the proteids to which the activator is united. The maximum of glycolytic action is found in the combination of 75 gms. muscle and 0.8 gm. pancreas. On the addition of 2 gms. pancreas, the action ceases entirely. What is the explanation of this peculiar phenomenon? One might consider that the pancreas contains two bodies, the one accelerating and the other inhibiting. Against this supposition is the fact that the phenomenon occurs with the use of the entire pancreas to the same degree as with the use of the various alcoholic extracts. The two bodies would then have the same solubilities, and yet at first the one, and later the other would act. A good analogy is furnished by the phenomenon termed by Ehrlich the "Diversion of the Complements." Neisser and Wechsberg have found that in the destruction of bacteria by immune sera, in which the cooperation, if amboceptor and complement is necessary, the presence of an excess of amboceptor inhibits, and in certain circumstances, entirely stops the action. It would appear as if the excess of amboceptor, by uniting with the available complement, prevents that union of bacteria, amboceptor and complement, which is necessary in the complete destruction of the bacteria. Cohnheim has found that blood-serum itself contains an activator like that of the pancreas, and muscles containing blood, show without the further addition of pancreas, the phenomenon of glycolysis.

The Fate of Glycocoll Intravenously Injected.—A single injection of considerable amounts of glycocoll into the blood of the dog, causes, according to S. SALASKIN and K. KOWALEWSKY (*Hoppe-Seyler's Zeitschrift*, August 17, 1904) an increased ammonia content in the blood. The latter gets rid of the glycocoll very quietly, eliminating it partly, but to a slight extent, by means of the urine, and partly transferring it to the tissues. The fact that the glycocoll, under the conditions of the experiment, cannot be recovered from the tissues, would suggest that it there under-

goes certain transformations. It is possibly split up with the production of ammonia, which would account for the appearance of ammonia in the blood.

The Question of Hemagglutinins.—The isolation of distinct chemical substances, the agglutinins, has not yet succeeded, according to A. BEXHEFT (*Pflüger's Archiv*, August 15, 1904). Belief in the chemical individuality of these substances would require a numerical relationship between the agglutinating and agglutinated substances. The author found that by mixing ox-blood with corresponding amounts of the blood of swine, substances may be obtained which agglutinate the red blood capsules of the latter. Success in the procedure required the use of equal quantities of both kinds of blood. The agglutinins are contained in the serum, for if this be decanted from the clump of red blood cells, it will still be found capable of agglutinating the cells. No agglutinins can be obtained from the agglutinated corpuscles of the swine, by means of a physiological salt solution. From these results the author draws the conclusions that in ox-blood there is present a distinct substance capable of agglutinating the red blood cells of the pig; and that one may probably have to deal with a chemical union of this substance with the red ox-blood cells, since it cannot be recovered by simple dissolving media, such as physiological salt solution.

The Occurrence of Acid-Amides in the Urine in Pathological Conditions.—The normal human urine contains the faintest traces of acid-amines, according to A. IGNATOWSKI (*Hoppe-Seyler's Zeitsch.*, August 17, 1904). Even after the subcutaneous injection of glycocholic acid, no acid-amines are found in the urine. But considerable quantities of this substance are found in the latter in cases of gout. In seven cases of gout glycocholic acid was regularly present, and in three of the same cases, other acid-amines, probably leucine and asparaginic acid were found. Acid-amines are also present in pneumonia, particularly at the crisis and in leucemia.

The Inorganic Constituents of Tumors.—Following the discovery by Loeb that the health of the tissues is dependent upon the chemical equilibrium of definite inorganic substances in their environment, one naturally expects numerous researches into the inorganic chemistry of tissues which are the seat of pathological processes. S. P. BEEBE (*Am. Jour. Physiol.*, October 1, 1904) is investigating the chemistry of malignant growths. He has already made an analysis of the inorganic constituents of tumors, with certain interesting results. He admits that ash analyses do not show the conditions in the living tissues; the metals may be present in the cell as iron proteid combinations, but the amount of calcium relative to potassium or sodium, for instance, can be determined by such an analysis, and recent work has demonstrated that the relative proportion of these elements may determine the degree of activity in such important structures as glands and muscles. It is probable, he believes, that the soluble, easily diffusible salts have much to do with maintaining the proper osmotic environment of a cell during the continuous and varied changes in the surrounding medium. They are, therefore, important aids in the nutritional processes of a tissue. He gives the results obtained from the ash analysis of nine neoplasms, one of which was benign, and determines the percentage of N, S, P, Fe, CaO, K and Na, contained in the ash. The N varied from 9 to 12 per cent, the difference probably depending upon the variations in the amount of fat. In the case of a carcinoma of the liver, secondary to a growth in the pancreas, the nitrogen was

precisely the same as in the normal tissue surrounding it. The growth having the smallest amount of unclear material, the uterine fibroid has likewise the smallest amount of phosphorus. The ratio between calcium, potassium and sodium furnish the most interesting results of the work. Two badly degenerated tumors contained about ten times the amount of calcium found in the fresh, vigorously growing tumors, and there was at the same time a much smaller content of potassium. The analyses indicate that degeneration is accompanied by an increase in calcium or decrease in potassium; the ratio between the two is altered by a relative increase in the calcium. The conditions found appear to be in accord with what is known regarding the physiological rôle of calcium and potassium. In their effects on vital phenomena they stand opposed. The intense activity brought about by the potassium ion in the gland cells of the intestine, as shown by MacCallum, is stopped by the calcium ion. Their effects also on muscle tissue is an antagonistic one. In the degenerated tissues the vital activity has ceased, only autolysis is going on, and in these tissues is found a large amount of calcium. The fresh, vigorous tissues, having active nutritive changes, contain a relatively large amount of the ion which has the power to call forth vital activity. The presence of potassium seems to be associated in some way with the remarkable nutritional activities of tumors, of which rapid growth is one manifestation. The author believes it will be interesting to know whether, as in the glazed cells of the intestine, the continued exposure of the cells in a rapidly growing tumor to the influence of the calcium ion would be followed by an inhibition of the intense metabolic activity associated with the preponderance of the potassium ion.

Atypical Cases and Dust Infection.—Under this caption there is described by ROBERT HESLER (*Am. Med.*, Oct. 1, 1904), a symptom-complex which is fairly uniform or constant and entitled to the name of a distinct and independent disease. By "dust disease" is meant not the specific diseases which can be transmitted by the agency of dust or may follow the inhalation of dust, such as pneumonia, typhoid, tonsillitis, bronchitis, etc., but those hitherto vague and ill-defined symptom-complexes that are variously referred to as colds, biliousness, migraine, hypochondria, etc., or as atypical cases of influenza, rheumatism, gastritis, neurasthenia, auto-intoxication. Cases of dust disease are to be especially looked for under and separated from recognized diseases in which "rheumatic and gouty diatheses" play a part, also among cases spoken of as nervous; likewise in cases in which there are frequent alimentary or respiratory tract disturbances. It is most prevalent in crowded cities; country people may be attacked on going to the city. It is absent among Arctic explorers and weather observers on high mountains, but these on returning home may be attacked again. The cases may be divided into groups depending on which part of the body is chiefly affected. There is marked or recognizable pathological lesion. The causative factor is infective dust and whether it produces systemic infection, or a septic intoxication or sapremia, is immaterial from the clinical standpoint. Care must be taken not to confound the symptoms at first with those of other specific diseases which they may resemble. When once recognized, the most important point in treatment is a change of atmosphere. A number of cases are detailed to support the author's contentions.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS in the form of Scientific Articles, Clinical Memoranda, Correspondence or News Items of interest to the profession are invited from all parts of the world. Reprints to the number of 250 of original articles contributed exclusively to the MEDICAL NEWS will be furnished without charge if the request therefor accompanies the manuscript. When necessary to elucidate the text, illustrations will be engraved from drawings or photographs furnished by the author. Manuscript should be typewritten.

SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,
No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	\$4.00
SINGLE COPIES10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	8.00

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in registered letters.

LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, OCTOBER 22, 1904.

A LESSON FROM THE ORIENT.

THERE is food for profound reflection and incentive for vigorous action in the paper read before the International Congress of Military Surgeons in St. Louis, by Dr. Louis L. Seaman, of New York. We are, as a nation, not so much more astute than the holy men of the Middle Ages, who held themselves aloof in their monasteries and prayed the Divine Hand to check the tide of plague and death that rolled in the wake of war. We accept as a concomitant of war disastrous losses through preventable disease, and feel that when we have properly expressed our dismay and disgust at the corruption of the government and the shortsightedness of the powers that be, we have done all we can in behalf of civilization.

Dr. Seaman, who was a major and surgeon in the United States Volunteers during the war with Spain, has just returned from a recent observation of Japanese sanitary and surgical methods in the war with Russia. From his report it seems that no obstacle has been too great to overcome, no detail too trifling to be observed, with the result that there has been during this six months of terrible fighting and exposure in a foreign country only a fraction of one per cent.

loss from preventable disease. Contrast this with the results in our own Spanish War. The actual deaths from bullets was only 268 while the deaths from disease, in camps far from the seat of war, amounted to 3,682 more than fourteen times as many.

Were we to move an army to the front to-morrow, our record would probably be the same, and yet the Japanese have only recently learned their lessons from us, and from the sources from which we draw our science. But the difference is, they believe and *do*, while we believe and don't do.

Witness the way in which they act upon the principle that an army's fighting power depends upon the quality of its rations and the observance of hygiene. The medical officer is everywhere prominent. He is with the scouts, making microscopical and chemical tests of the water and the soil, labeling wells, so that the army shall drink no contaminated water. He examines towns, and puts a cordon around any quarter where there is infectious disease. The medical officer also accompanies foraging parties, testing fruits and vegetables sold by natives, and if the fruit requires cooking or the water boiling, or if there is any taint suspected, notices to that effect are posted, and such is the discipline, from commanding officers to the rank and file, that obedience to his orders is absolute.

The medical officer also supervises the personal hygiene of the camp. He teaches the men how to cook, how to bathe, how to cleanse the finger nails to free them from bacteria, as well as how to live in general a healthy, vigorous life, and it is a part of the soldier's routine to carry out these instructions in every particular.

Long before there was any outbreak of hostilities the medical officer was with the advance agents of the army, testing provisions that were being collected for troops, and as a consequence the medical officer of the Japanese army has successfully prevented thousands of cases of intestinal diseases, diarrheas, dysenteries, typhoid and malarial fevers.

From the economic standpoint it has been estimated that whereas Russia will probably lose four men by disease for every one killed in battle, Japan will probably be able, by the better health of her army, to neutralize the advantage of her enemy's superior numbers.

From the standpoint of humanity, of common sense, of civilization, it is nothing short of criminal to permit such ravages of typhoid as are at

present threatening the German army and worked such havoc among the English in the Boer war. It is bad enough for intelligent men to lead their comrades on to human slaughter, but it is worse for scientific men and a civilization that boasts that it depends upon science, idly to watch its compatriots walking into preventable pitfalls of disease.

We may learn a lesson from the artistic sense of proportion and the exquisite attention to detail of our Japanese friends. It is not only those who know how to contrive death for the greatest number that are put in command, but those who know how to prevent death to the greatest number; and the system of prevention is deemed as worthy of detailed care as the system of drill and attack.

Shall we, as a nation, learn this lesson which Japan has taught? Or shall we still go on shrugging our shoulders, dividing the blame between the corruption of officials and the stupidity of the rank and file?

WOOD ALCOHOL.

THE lamentable state of public and private morals in its disregard of the life and happiness of others within the last week has been brought sharply to the fore in a manner that, we hope, may be highly salutary.

It seems to need the sacrifice of human lives to stir our busy people to the recognition of dangers that have for years been pointed out by the profession, whose warnings, however, have fallen on careless and unheeding ears.

The arrest of certain fraudulent drug dealers for the adulteration and placing on sale of highly valuable and at the same time extremely dangerous drugs has been referred to. Deaths, due to the use of the substituted wares, have no doubt occurred, but they have usually taken place in the sick chamber, when such a result might have been possible from disease. The harm which this criminal business has done is not measurable, but it exists.

In the case, however, of a precisely similar type of adulteration, namely, the substitution of cheaper wood alcohol for the more expensive grain alcohol in whisky, brandy, gin and other liquors, death has resulted in a number of instances, and happily has called active attention to a form of adulteration that has flourished for many years. In this case, as in the former, the guilty parties have grown greedy in their nefarious work, and instead of making ten per cent.

acetanilid mixtures in their drugs, or five per cent. methyl alcohol substitutions, they have grown bolder and bolder, adding more and more of the cheaper grades of material, until finally the result of their work has become a public scandal.

Pharmacologists have told us with reference to the so-called marsh gas series of alcohols, methyl, ethyl, propyl, butyl, amyl, etc., that with the addition of the carbon and hydrogen atoms the toxicity of the compounds increases, and older chemists laid so much stress on the higher alcohols, collectively denominated fusel-oil, that heretofore practically all tests for purity have concerned themselves with these butyl and amyl compounds. Since the manufacture of synthetic wood alcohol, however, this material has been used in larger and larger quantities as an adulterant. Lacking most of the telltale odor of the older natural product, its use has escaped the vigilance of the average consumer.

Although methyl alcohol, if we are to believe the pharmacologists, is thought to be less poisonous than ethyl alcohol, nevertheless it is to be borne in mind that up to the present time not much is known of the pharmacology of the synthetic product, and there is little doubt that the wood alcohols of synthesis are not uniform.

The early researches of Dujardin-Beaumetz and Audigé with natural wood alcohol showed that this alcohol was about one-half the strength of ethyl alcohol, and later observers have confirmed the earlier findings; but it was first shown by Pohl and corroborated by Joffroy and Serveaux that methyl alcohol did not break down, as does ethyl alcohol, and even the higher members of the series, into acetic acid and simpler products, but that it remains for a comparatively long time in the organism, and that if it be taken for a continued period this slow oxidation and slow elimination permit a cumulative action and thereby bring about paralysis and death. Thus animal experiments have shown that ethyl alcohol and even amyl alcohol may be given for weeks or even months at a time and in narcotic dosage without causing death, because of the steady and comparatively rapid oxidation and elimination, whereas, with methyl alcohol the animals perished if the dosage was continued at the narcotic point for a week. Intense fatty degeneration of the liver has been a constant finding in these experimental studies.

A point of further difference has been found in the more intense action of wood alcohol on the

eye. Here its toxic action manifests itself in a most intractable form of blindness.

The extensive series of cases of this form of poisoning now being published by Drs. Buller and Casey Wood (*Journal American Medical Association*, October 1, 8, 15, *et seq.*) brings into prominence how many may be the sources of poisoning from this form of alcohol. Jamaica ginger, essence of lemon, essence of peppermint, witch-hazel, varnishes, turpentine, and colognes and scores of preparations are known to contain it.

The New York City Board of Pharmacy has not been as unmindful of its duty, we believe, as has the chemical department of our City Health Department. For some years the pharmacists of the city have been persistently followed up and prosecuted if wood alcohol has been found in any of the official pharmacopœial preparations calling for grain alcohol. The Board of Pharmacy has not always had the hearty support of the judiciary, which, to our regret, too often needs the same lessons that an ignorant public needs to awaken it to its duties, but notwithstanding such drawbacks, efficient service has been rendered by this body. If our Health Department had been as alive to its opportunities in the matter of testing alcoholic liquors in our city saloons, fewer deaths might have resulted, and this branch of the city work might have demonstrated its usefulness in as convincing a manner as has the more active medical service.

NEW YORK STATE MEDICAL ASSOCIATION MEETING.

THE twenty-first Annual Meeting of the New York State Medical Association has been in session during the past week. One of the most interesting features of the meeting was the formal reception of the news that the long-looked-for, much-hoped-for, union of the two medical organizations of this State has not taken place, as was anticipated, and cannot take place until after the change in the by-laws, which will not be operative for at least a year.

Under the constitution and by-laws of the New York State Medical Association, no proper formula for the calling of a regular meeting of State or county associations was embodied. As a consequence, the action of the committees of the two State organizations was upset by the suit of a single member of the Association who claimed that proper notice of the proceedings had not been given him, nor did he wish to agree

to the proposed union. The necessary change in the by-laws has been proposed, but this must lie over in the Association for a year, and until formal action is taken upon it no further steps for the union of the two societies can be taken.

This seems to be an unfortunate delay. We feel, as do the vast majority of the members of the medical profession in New York, that union of the two organizations is eminently desirable and is sure to bring good results in its train. On the other hand, we are convinced that none but good results will follow, though there are still some who think that certain evils may creep in. We are sorry that a mere legal quibble should render impotent, for a time at least, all the efforts that have been made in recent years to bring about so desirable a consummation as the corporate union of the members of the regular medical profession in the Empire State. We agree with the President of the Association, who, in his annual address stated emphatically his hope that union would take place just as soon as it could legally be accomplished, and that in the meantime both organizations should strive to interest as many physicians as possible in the idea that membership in medical organizations is sure to bring with it, not only information and help for practice, but stimulus and inspiration for scientific and clinical work and fraternal good feeling, both in professional duties and in social life.

This year's meeting of the State Medical Association has not been as successful, either from the scientific or social standpoint as those of previous years. This is not difficult to understand, and is no fault at all, either of the members of the Association or of the committee in charge of the program. Until a very short time ago it was thought that there would be no meeting of the New York State Medical Association this year, but that the united Society and the Association would hold a common and enthusiastically successful meeting. Under the circumstances the committee have done very well not to allow the meeting to lapse for the present year and to go on, in spite of discouragement, with the work of the Association.

Many of the papers read at the meeting proved of great interest and were discussed very suggestively. Some papers not on the program, but read by members, proved to be especially valuable. The present year's meeting by no means represents the true spirit nor the forceful ability of the Association, but the new board of of

ficers promises to make the next year of the Association quite as successful as any in its history, if there will not even be an actual advance in scientific and social features.

ECHOES AND NEWS.

NEW YORK.

Officers of the New York State Medical Association.—The following officers were elected by the New York State Medical Association for the ensuing year: President, Dr. J. Riddle Goffe, of New York; Vice President, Allan A. Jones, of Buffalo; Secretary, Charles Ira Redfield, of Middletown; Treasurer, Frederick A. Baldwin, of New York; Chairman of Committee of Arrangements, F. W. Loughran, of New York; Chairman on Committee of Legislation, Dr. E. Elliott Harris, of New York; Chairman of the Committee on Library, Alexander Lambert, of New York; Chairman of Committee on Public Health, Louis C. Ager, of Brooklyn; Chairman of Publication Committee, C. E. Denison, of New York; Chairman of Nominating Committee, Dr. Wisner R. Townsend, of New York; Delegates to the American Medical Association, Dr. Everard D. Ferguson, of Troy, N. Y. and Dr. Wisner R. Townsend, of New York.

Gifts to Charity Hospitals.—By his will, filed for probate in the Surrogate's office recently, Moritz M. Frankenthal, of New York, bequeathed \$1,000 to each of the following named charities: Mount Sinai Hospital, Hebrew Orphan Asylum Society, Montefiore Home for Chronic Invalids, Hebrew Infant Asylum, and the Home for Aged and Infirm Hebrews.

A First Prize for New York.—It was announced by Secretary Murray, of the Department of Health, that the Department had been notified by the officials of the Louisiana Purchase Exposition at St. Louis, that the superior jury of awards had awarded the grand prize to the city of New York, for their exhibit of health charts and statistics.

Pneumonia Commission to Meet.—The commission appointed by the Health Board to study pneumonia, and endeavor to find means of preventing it, will hold its first meeting at the Health Board on Saturday, October 22. The commission will be made up of prominent bacteriologists from Philadelphia, Baltimore, Boston, Chicago and this city. After a business session they will probably be entertained at dinner at the University Club by Health Commissioner Dr. Thomas Darlington and Dr. H. M. Biggs, chief medical officer of the department. Dr. Darlington is having statistics of pneumonia for the last twenty years prepared from the department records and charts, showing the steady increase in the number of cases.

To Keep City Water Pure.—Not satisfied with his hurried investigation of the watershed conditions on Saturday, Mayor McClellan has told Dr. Thomas Darlington, Commissioner of the Board of Health, that he would soon make another trip through the Mount Kisco, Bedford, Katonah and Lake Mahopac sections. It is probable that the tour will be made in the Mayor's automobile next Saturday, weather permitting. Dr. Darlington, however, has pronounced ideas regarding the methods which should be adopted to free the Croton watershed from all

sources of contamination. He is reported as having said that he did not believe in copper sulphate nor filtration systems and that the best way is to keep the water pure from the first. This can only be accomplished by seeing that the territory from which the supply is drawn is free from all the evils which have recently been discovered in the Croton watershed. Throughout the entire section of the watershed there is much building going on. This indicates an influx of persons who intend to reside there. The demand for property is increasing every year. There can be but one result—the section will become more densely populated each year, and the problem of protecting from contamination the network of small streams will soon become impossible of solution. The wholesale purchase of land in the watershed wherever there are dwellings near the lower levels of the valley, or to prevent the erection of new dwellings, would of course entail great expense upon the city. Land is held at an almost uniform price of \$100 an acre, and to buy the 360 square miles in the watershed would cost more than \$200,000,000. But this is what must be done eventually, if the source of New York's water supply is to be kept clean and wholesome. It seemed to him that it was not altogether a question of present necessity, but that future generations should be protected by action taken now. What will the residents of this city do twenty years or even ten years from now unless some means is devised to guard the purity of their water? Repeated efforts to obtain convictions for violations of the present laws to protect the watershed have invariably failed. When clear cases against farmers who allowed manure heaps to drain into the streams, had been made out, it was found impossible to find grand juries, made up of their neighbors, to indict them. More legislation is needed before legal restraint can be made effective.

Change at Bellevue Hospital.—The Board of Trustees of Bellevue and Allied Hospitals has received the resignation of Dr. George B. Fowler, who for many years has been the attending physician to the Fourth Division. The vacancy will be filled in the near future by some member of the medical profession of New York City who is not connected with any of the colleges, the Fourth Division in Bellevue always having been an open one, that is, not being in any way under the control of the faculties of the several colleges. Applications for the position may be made to Mr. James K. Paulding, Secretary of the Board of Trustees of Bellevue and Allied Hospitals. It may be explained that Mr. Paulding is also Chairman of the Conference Committee, consisting of two members from the Medical Board and two from the Board of Trustees. Before this Committee all names will be brought for con-

PHILADELPHIA.

Free Use of Antitoxin Urged.—Diphtheria is now prevalent in the city, the new cases for the past week showing a considerable increase over those of the preceding one. Chief Abbott, of the Bureau of Health, urges the preventive use of antitoxin to aid in limiting the spread of the disease. The city laboratory manufactures enough antitoxin to supply every physician free of charge with all for which he has need. It may be secured at any police station by the physician agreeing to furnish the Bureau of Health a history of the case in which it was employed.

Animal House for Medical College.—Contract has been let for the construction of a \$40,000 vivarium for the medical department of the University of Pennsylvania. The building will be of the most approved type. Work is to be begun immediately.

Ask for Dental Corps in Army.—The Fifty-eighth Annual Meeting of the Pennsylvania Association of Dental Surgeons was held at the Continental Hotel during the past week. A resolution was passed endorsing the movement of the National Association to secure the placing of a corps of commissioned dental surgeons in the United States Army.

Stereoscopic Skiagraphy.—At the Philadelphia County Medical Society, October 12, Dr. M. K. Kassabian read a paper on "The Value of Stereoscopic Skiagraphy" and gave a practical demonstration of the principles involved. By an ingenious arrangement of plates a negative is made, as it were, for each eye and the resulting skiagraph appears as if the observer were looking directly at the object under examination.

CHICAGO.

Bright's Disease in Chicago.—The first death from this disease, according to the weekly bulletin of the Health Department, was recorded in May, 1864, but it was not until 1868 that deaths from the malady were reported in sufficient number to compute rates. In the Annual Report of the Commissioner for 1894 it was shown that the rate had increased 84 per cent. in twenty years, that it is in the decade 1885-1894, compared with that of the decade 1868-1877, and it was then said—speaking of the group of steadily increasing diseases—that: "Sanitarium administration can do little with these diseases or with the increase of Bright's disease and of diseases of the nervous system. The high tension of modern life—nowhere higher than here in Chicago—with its besetting temptations to irregular habits and to excesses of various kinds, and its great strain upon the most complex and most important mechanism of life—is something that the sanitarium can but recognize and regret; its relief and remedy will come only through saner views and modes of life." "Saner views and modes of life" have not yet arrived, and the death rate of Bright's disease has increased upward of another 80 per cent. in less than a decade—that is, from five in the 10,000 of population in 1894 to 9.09 in 1903, or 81.8 per cent. in nine years. The apostle of "The Simple Life" has not arrived in this country any too soon. Chicago needs him.

Smallpox.—Three cases of this disease were admitted to the Isolation Hospital during the week. Of these one was an unvaccinated adult, one a schoolboy ten years of age, who had been admitted on a false certificate of successful vaccination, and the third a baby of ten months not yet vaccinated. Attention is again called to the large number of smallpox cases occurring in infants and children under the school age during the first nine months of this year, as well as during 1903. The plea is renewed for the protection of children against smallpox by means of vaccination during the first year of life. In fact, the best time to vaccinate the infants is during the third month, at a time when the arms are not much used, and before the disorders attending teething have begun.

Fined \$100.—A Dr. Maharg, said to be formerly City Chemist, was recently arrested, together with four women, who, garbed as Sisters of Charity, se-

cured contributions for an alleged home for consumptives claimed to be operated by the Doctor at an empty building on North Clark Street, called the Nazarene Mission. He was fined \$100, and the women were remanded.

Chicago Medical Society.—At a meeting held October 5, Dr. Hugh T. Patrick showed a case of idiopathic muscular atrophy, the patient being a young woman, twenty years of age, whose trouble began at the age of twelve. She had never been able to close her eyes tightly. She had never been able to whistle or pucker the lips normally. There was marked lordosis. At the age of twelve she was noticed to walk in a peculiar manner, with the shoulders thrown back. The muscles about the arms and shoulders were very weak, and although the deltoids were large and hard, they were weak. There was more or less weakness of the scapula owing to paralysis of the serratus. The case corresponded with the Landouzy-Dejerine facio-scapulo-humeral type. The patient had an affection of the gluteal muscles, and of the psoas and iliacus, whereas the muscles in the lower limbs were good. She could not raise her toes so as to stand on the heels. The case was atypical in distribution, in that it partook of many of the different types. The knee-jerks had almost entirely disappeared when she was admitted to the hospital, but under large doses of strychnine they became distinct, so that now they were normal. Dr. Patrick showed next a case of multiple neuritis, which manifested several interesting features. A third case was one of acroparesthesia nocturna in a young woman, twenty-three of age, who had had this trouble for two years. She was not troubled during the day. In the night she would awake with numbness and tingling which was so intense as to almost amount to pain. The attacks began in the right arm, paralyzing it for the time being, but after getting out of bed, rubbing the arm, putting it in hot water, shaking it, etc., the tingling disappeared, after which she would go back to bed. As a rule, she got this tingling only once in the night. The next case was one of cervical rib. He said cervical rib was not frequent, and most of the cases of cervical rib had been discovered accidentally, either post-mortem or during an examination for other trouble. He showed other cases of muscular atrophy and of multiple neuritis. His last case was one of Caisson disease. The patient could not use his leg below the knee. Patient worked in a caisson, seventy-five feet below the surface, in which the pressure was twenty-five pounds to the square inch. He felt no inconvenience from working aside from pressure in the ears. After working in a caisson for some time, he began to feel tingling and numbness in his legs, so that they eventually became useless. He felt this tingling in his arm also, lost consciousness, and was unconscious the first night after the attack. The next morning his legs were paralyzed. He felt dazed and confused. His arms were all right the next morning, but his legs were completely paralyzed. The speaker said that this disease could be avoided if proper precautions were taken.

Dr. Charles L. Mix reported a case of "Traumatic Neurosis associated with Tabes" in a negro. He said that the cases were unusual. Clinicians of large experience had described but very few cases. In this case the tabes was clearly traceable to specific infection, but the patient's neurosis was caused by a railroad accident.

CANADA.

Impressed with the Cure for Tuberculosis.—Dr. A. de Martigny has returned to Montreal from Paris, and states that he believes that Dr. Marmoreck's serum will accomplish for tuberculosis what Jenner's vaccine did for smallpox. Dr. Martigny went to Paris as a special commissioner for the Montreal Board of Health to investigate the new serum. He will present his report to the Board of Health at its next meeting.

Hospital Saturday in Vancouver, B. C.—Saturday, October 15, was "Hospital Saturday" in Vancouver, B. C. This is now an annual fixture in the life of this thriving, growing city of the Pacific Province. The citizens of Vancouver contribute on this day to the funds of the Vancouver General Hospital, and the Woman's Auxiliary of the institution make a special collection of the boxes which are exhibited in prominent places all over the city. Last year some \$1,200 was collected in this manner.

Typhoid Notification in Ontario.—The Ontario Board of Health has issued a special circular signed by the Secretary thereof, Dr. C. A. Hodgetts, calling for the immediate notification to the local boards of health of each and every case of typhoid fever coming under professional care. The Public Health Act required both the householder and the physician in charge of a case of typhoid fever to notify the authorities within twenty-four hours, and it is the intention of the Board of Health to see that the Act is complied with in the future.

Canadian Nurses' Association.—The annual meeting of the Canadian Nurses' Association was held in Montreal recently. The reports for the year of the Registrar, Secretary and Treasurer, were most encouraging. During the year the association had 1,136 registrations and arranged for 1,090 cases. The past has been the largest year's work since the inception of the association in 1895, and it now numbers 200 members. A course of six lectures are arranged for each season given by leading medical men of Montreal.

GENERAL.

Lecture to Panama Natives on the Prevention of Malaria.—Dr. Roland Ross, a retired surgeon of the British Army, who has spent a week in Panama studying the general sanitary conditions, delivered an interesting lecture at Ancon Hospital, in the canal zone, on the mosquito theory regarding malarial fever. He impressed upon his audience the fact that malaria is practically preventable, as was proved in Suez and Cuba, if the general public and the authorities cooperate effectively.

Diphtheria in Trenton.—There is an epidemic of diphtheria in Trenton, N. J., and the health authorities say it will be difficult to check it because of their stock of impure or inert antitoxin. An effort was made last winter to pass an act to establish a State laboratory for the manufacture of pure antitoxin of the standard quality and strength. It was defeated because a couple of bills got mixed up in the not very clear minds of the legislators, and the law that was finally put upon the statute book provides that any Board of Health may contract with some responsible manufacturer to supply antitoxin, free of charge, upon the certificate of an attending physician, to such indigent patients as may require it. From the reported conditions in Trenton it may be judged that responsible manufacturers are not so easily found as might be imagined. It would be infinitely better to have the State supply good antitoxin

in all quantities needed rather than have one or more cities stricken with diphtheria.

Government Needs Hospitals.—Surgeon General Rixey, chief of the Bureau of Medicine and Surgery of the Navy, has rendered his annual report to Secretary Morton, showing that the medical corps is in excellent and efficient condition, although the Surgeon General calls attention to the many difficulties under which it labors. It is stated that the future needs of the service will require hospitals at Charleston, S. C.; Guantanamo, Cuba, and Olongapo, P. I. The failure of the navy medical service to obtain good and ambitious surgeons is attributed in part to the fact that assistant surgeons receive fifteen per cent. less pay when on shore than do passed surgeons in the army. The naval hospital corps is reported to be in excellent condition, and it is recommended that it should be recruited to a strength of 1,000. It is also recommended that the number of pharmacists in the medical corps be increased to fifty. As was to be expected as a result of the President's orders muzzling those who might talk about estimates, none are given out for publication in detail in connection with this report. The estimates for medical services are, however, greater than last year.

Sensible Animal Philanthropy.—The late M. Léon Cléry, for many years a prominent member of the Paris bar, made a will which shows that his well-known love of animals had a strictly practical side. He has left an annuity of £120 per annum for the master or mistress of a primary school in France or Algeria who best fulfils the conditions of a program which includes teaching children the difference between useful and harmful animals, instructing them to respect harmless snakes, toads, owls, etc., which old prejudices have caused to be the object of antipathy, and teaching children the utility of these animals. These prejudices, we regret to record, have too frequently been observed in the most zealous advocates of the Society for the Prevention of Cruelty to Animals, particularly in those specially drawn toward the antivivisection propaganda. The prize is to be awarded annually by a committee chosen from among the members of the Society for the Prevention of Cruelty to Animals. M. Cléry has also made several interesting bequests to the Paris museums; and at the end of his will he expresses a hope that the legacies in money will not be wasted by heavy legal expenses.

Military Surgeons' Congress.—At the concluding meeting of the International Congress of Military Surgeons held at St. Louis last week, officers were chosen for the coming year. Surgeon-General Walter Wyman of Washington, D. C., formerly first vice-president of the association, was chosen president; Major Albert H. Briggs of Buffalo, vice-president; Brig.-Gen. Robert M. O'Reilly, of Washington, D. C., of the United States Army, second vice-president; Major James Evelyn Milcher, of Carlisle, Pa., belonging to the United States Volunteer Service, secretary, and Major Herbert A. Arnold, of Ardmore, Pa., attached to the National Guard of Pennsylvania, treasurer. The winners of the Enno Sanders prize essay contest were announced. The first prize was awarded to Lieut.-Col. William Hill-Clime, of London, England, for the best paper on military surgery. The prize consisted of a lump of gold worth \$100, on one side of which appeared the effigy of Enno Sanders of St. Louis, the giver, and on the reverse side the line, "For the best paper on military surgery." The second prize was awarded to Lieut.-Col. Hathaway, of the Royal Volunteer Medical Corps of Ithaca, India. The prize was a life membership in the Association, estimated at \$50. The meeting place next year will be Detroit, Mich.

The Canteen.—This subject will not down. So long as the Army officers are confronted by a condition and not a theory, the practical solution of the problems of drunkenness and of venereal diseases is to be found not in misty vaporings, but in sound common sense. Since Gen. Corbin's report showed that that very experienced and capable observer thought the time ripe for advocating the restoration of the army canteen, testimonies in the same direction are multiplying, writes the *Times*. The Judge Advocate-General of the army appends to his annual report the reports of two of his subordinates, the Judge Advocate of the Department of Colorado, and the Judge Advocate of the Department of Texas. Each of them emphasizes the evil effects upon the army of the abolition of the canteen, as promoting crime in the army, including the crime of desertion. The abolition, according to Col. Dunn, has resulted in multiplying "saloons and brothels," according to Col. Roberts, in multiplying "the saloons and dives that the virtual abolition of the canteen feature of the post exchange has made a universal feature of every military post." And Gen. Barry, the Commander of the Department of the Gulf, in his annual report, remarks: "It would add much to the discipline and contentment of the enlisted men at these outlying stations were the post exchange fully established, with the privilege of selling beer and light wines." The testimony of the officers of the army as to the evils of abolishing the canteen is virtually unanimous. It is they who have the greatest interest in the efficiency of the army, to which temperance is of course essential. They are the only expert witnesses: If one asks why, then, does not Congress authorize what all the experts agree to be so desirable, the only answer is that Congress goes in fear of a number of misguided persons who know nothing about the matter, and who have no right to an opinion upon it. If these people would kindly mind their own business, and refrain from trying to impose their ignorant views of the subject upon the lawmaking body, the canteen would be restored without opposition, save from those busybody women, of both sexes, who are afflicted with the mania to reform—someone else.

Panama Health Situation.—At the present time the health conditions are, relatively speaking, good. Panama is more healthful than other low coast places in the tropics hereabouts. The average number of deaths in Panama now is 100 a month. Last month 101 deaths were recorded, and the preceding month 97. Taking the population as 20,000, the ratio is easily arrived at. Sixty per cent. of the deaths occurred among the natives, the remaining 40 per cent. being divided among Europeans, North, Central and South Americans, and the other foreigners. The mortality among the North Americans was slight. Owing to the very unsanitary manner in which the natives live, especially the lower classes, it is remarkable that the death rate among them is not higher. Tuberculosis is a very common disease with them. Last month there was nineteen deaths from that disease alone, more than from any other disease. There have been a few cases of yellow fever this year, and there are at present two or three patients in the canal hospital, Italians, now on the road to recovery. Only one death from yellow fever among the Americans has occurred, the victim being Cunningham, an employee in the police service of the canal. The Americans in general have retained exceptionally good health, notwithstanding the fact that they have come down during the unhealthy season. Most energetic measures have been taken by the United States sanitary service to stamp out this disease, and while,

owing to the close proximity of yellow fever districts, it may not be stamped out altogether, yet there is no doubt that it will be reduced to a minimum. Guayaquil, a well-known yellow fever hotbed, is only three days from Panama by steamer; hence, since the incubation period is fixed at a maximum of ten days, a person contracting the disease in Guayaquil can take passage for Panama and be in Panama a few days before the development of the disease. The sanitary officers are waging an incessant warfare on the mosquitoes, and are gradually getting all the canal buildings screened. Particular care is taken to screen all patients. Among the other diseases prevailing are to be enumerated smallpox, leprosy, beriberi, diphtheria, malarial and pernicious fevers, and occasionally pneumonia. There are some cases of leprosy, particularly on the island of Taboga, about fourteen miles distant from Panama. The lepers run at large. Beriberi has been common among laborers, and in recent years it has numbered victims in the upper classes. The most common disease of all is malaria, and many people, including natives and foreigners, suffer from it. It is not amiss to state, however, that the malaria is in most cases contracted through an utter disregard of all precautionary measures, the vast majority not even taking the precaution to sleep under mosquito netting.

OBITUARY.

Dr. FRANK GREENOUGH, formerly one of Boston's most conspicuous physicians, died in Brookline, Mass., October 16. He was born in Boston sixty-seven years ago, and was graduated from Harvard in 1859, and afterward studied at several European medical universities.

Dr. WILLIAM WHITE, of Abingdon, Va., is dead in a hospital in Baltimore, where he underwent an operation. He was a brother of Judge John P. White, Chief Justice of the Supreme Court of Texas.

SOCIETY PROCEEDINGS.

NEW YORK STATE MEDICAL ASSOCIATION.

Twenty-first Annual Meeting, held at the Academy of Medicine, New York City, October 17, 18, 19 and 20, 1904.

FIRST DAY—TUESDAY, OCTOBER 18.

The President, William Harvey Thornton, M.D., of Buffalo, in the Chair.

Conservatism versus Early Intervention in Simple Dystocia.—Dr. William J. Meyer, of White Plains, N. Y., read this paper. He said that although much might be said concerning the unusual conditions which the obstetrician encounters, such as fetal monstrosities and abnormal conditions in the parturient woman, other than those to which he referred later on, he wished to emphasize the importance of active intervention in a certain class of cases which, too frequently, are neglected, although very frequently met with. These cases were those in which dystocia resulted from a lack of expelling force or from resistance encountered in the birth canal of an anatomically normal woman. There is generally an unwholesome fear of assisting labor. This, he said, was due largely to the fact that our predecessors had established a precedent from which we were loath to depart. The parturient woman cannot control the expelling force of her uterus, and often the life of the child is endangered by waiting too long for the descending head to dilate a rigid and undilated os. The obstetrician, having fully acquainted himself with conditions, should not fear to intervene to help in the dila-

tation of the undilated os. Dr. Meyer said that he knew of no physiological reason for not using the forceps early in very many cases, and that he had not found that the proper use of forceps had produced laceration. In 186 consecutive cases he had produced no laceration, and had no subinvolution nor post-partum hemorrhage. He said that he had found the tent useless in producing dilatation of the rigid os and that the Barnes bag afforded little help, but that manual dilatation was always to be commended. This, he said, required considerable physical strength, but that, when the laws of labor were thoroughly understood and observed, the results justified this form of intervention and also the early use of forceps. He had followed this plan for five years, and he believed that he had not only saved the lives of many infants but had lessened the strain upon the strength of the mothers. He reviewed the histories of two cases as examples of this. In one of these, to which he had been called in consultation, the mother had been in violent fruitless labor for fourteen hours. Manual dilatation of the rigid os and the use of forceps had been forbidden when he first advised this procedure. At this time the infant was vigorous, the heart sounds being clearly distinguishable. Several hours later, when the labor pains had continued for fourteen hours in all, he had dilated the os and removed the dead infant with forceps. One year later he attended the same woman and found her os uteri contracted and the uterus vainly trying to expel its contents. At this time, however, being alone in charge of the case, he had dilated manually the os and had delivered a healthy living child. The second case was similar in that the os was rigid and uninfluenced by forcible labor pains, although these had occurred at fifteen-minute intervals for two hours. After twenty minutes' manual dilatation he had delivered the child alive, although a previous similar condition had resulted in a stillbirth. In conclusion, Dr. Meyer said that stupid conservatism was the cause of many deaths, and that if manual dilatation and the early use of forceps were more frequently resorted to, the fear of maternity, so common among women, would be greatly lessened.

Manual Dilatation.—Dr. E. D. Ferguson, of Troy, N. Y., said, in the discussion which followed that he fully agreed in the use of manual dilatation, and that no one could judge accurately the amount of force applied to the os when instruments were used for this purpose. Manual dilatation, on the other hand, was always subject to the exercise of judgment. The reason for applying artificial dilatation was to be found in the attempt to equalize the extensive forces and the resisting forces. But keen judgment should be used, he said, and it should not be forgotten that meddling midwifery is bad midwifery. He further emphasized the value of manual intervention as compared with instrumentation, by referring to those cases in which embryotomy becomes necessary. The embryotome is a dangerous instrument, and might do serious injury in the uterine cavity, while the use of the hand of the obstetrician is always a safe method of emptying the uterus.

Dr. Bernard Cohen, of Buffalo, said that one advantage of using the fingers to dilate a rigid os is that the cause of the rigidity was often distinguishable. Another was that the membranes may be preserved, which is not always possible when other measures were employed. The fingers, having partly dilated the os, may often be withdrawn, for they act as a stimulus to the uterus when that organ is not contracting vigorously. This was particularly true when quinine and morphine had been administered. Dr. Cohen said, however, that he did not consider it wise to interfere before about six

hours had elapsed, thus differing from Dr. Meyers. In the use of forceps he preferred to use axis traction to the use of the long forceps more commonly employed. He further said that the exact time at which to use forceps was a nice point, that there was what he termed an "obstetrical moment" when they should be applied. In regard to lacerations, he said that he had averaged during an experience of over twenty-five hundred cases covering eight years, one tear in every seven cases, and that of these the proportion of cervical lacerations had been one in five, although he had had one hundred cases recently in which no laceration had occurred.

Complete Dilatation Before Applying the Forceps.

—Dr. J. B. Cook said that the obstetrician must be more than a midwife. He must not wait for forty-eight hours, but must assist the laboring mother. He advocated complete dilatation before applying the forceps, or at least the force must be applied until the muscles surrounding the os were paralyzed. This should always be done under either complete anesthesia or without any anesthetization, as partial anesthesia is dangerous under these conditions. It is more dangerous, he said, to wait too long before applying the forceps than to apply them too early, and that the exhausted muscle does not heal readily, after a laceration and, further, that the forceps should be left on until the head is fully delivered, because it it becomes necessary to reapply them a tear almost always follows.

Asthma and Its Relation to Environments.—Dr.

George N. Jack, of Buffalo, N. Y., read this paper. He said that asthma is not a disease, but is a symptom. It is, he said, a part of a vicious cycle; an abnormal biochemical and complex pathological process. It originates usually in the intestinal canal through a long-standing indigestion, and toxemia with faulty absorption and metabolism. This produces a toxic or lymphogenous chyle that generates an unstable blood, characterized by its extremely varied numerous and alarming paroxysmal morphological changes. These often alternate between lymphocytosis, an intestinal toxemic leucocytosis or anematoses, accompanied anatomically by a hyperplasia of the lymphatic and glandular structures and clinically by a most agonizing dyspnea. The nerve muscle spasm theory, he said, is now exploded. The anatomical structure of the air tubes disproves this, as they are composed of bone-like rings so constructed that no muscle contained in them could spasmodically contract in any way to interfere with ingress or egress of air. This is true of all the respiratory tract except the vocal muscles, and these never do except in laryngismus stridulus. Asthma, he said, is not a phantom disease produced instantaneously by smells, etc., but is a well-defined pathological process that has been gradually developing for months, years or generations. The asthmatic patient is always loaded for an attack. Lymphocytic and toxic leucocytic asthmatics with their unstable and rapidly disintegrating blood, their enlarged mucous glands and their relaxed blood and lymph capillaries in one class and the anemic asthmatic and his impoverished blood in the other, produce a variety of conditions that individualize each asthmatic and render him susceptible to a certain environment. Some environments explode this pathologically-charged machine into an asthmatic manifestation or encourage it when already exploded; other environments retard the explosion or quell it when it is already in action. As a simple example of this, he called attention to the common occurrence in the histories of all asthmatics, namely, when a bad day may be followed by a comfortable one, this being due to atmospheric conditions frequently. Dust, he further said, acts in causing an asthmatic attack by irritating en-

larged glands, but it is of minor importance, as it is only an aggravator and not a cause. Concerning seasonal changes, he said, that the fact that winter attacks were as frequent as those of other seasons and that his, as well as the occasional occurrence of an attack occurring in midocean, argued against the pollen theory. The fact that, in the asthmatic, the air tubes are the dumping ground of the toxic blood, is the factor in determining the location of the symptoms of the general diseased condition. In the treatment of asthma, Dr. Jack placed out-or-door life, in a high altitude, free from excess of moisture, and having an abundance of sunshine, as of first importance. This, however, should be in connection with attention to improvement in the intestinal disturbances.

An Old Specialty.—This was the title of a paper read by Dr. Jane Lincoln Greely, of Jamestown, N. Y., in which she painted a beautiful word picture of the life of the family physician. As the lymph, a carrier of all that is best for the living cell of the body, is to the animal organism, so is the family medical adviser to the community in which he labors. The special investigator and specialist is necessary for the advancement of the science of medicine, but the general family doctor also has his special field in the application of the results of original investigations. In doing this he wields unusual influence and in his supervision of the families in his charge he is not only the curer of disease but the far-seeing director of the lives, and by his guidance and instruction the general mental and moral as well as physical condition of the members of his community may be greatly influenced. Knowledge, wisdom, conscientiousness, unselfishness, character, must be his.

An Atypical Case of Appendicitis.—Dr. W. B. Reid, of Rome, N. Y., reported this case and said that in searching the writings of Deaver, Fowler, Mynter and Ochsner, he had found no mention of a condition similar to this case and that this stamped it as a rare case. A woman aged forty-nine years, married, had borne one child. Her general health had been very good except chronic indigestion and occasional swelling of the ankles. She had been thrown from a sleigh and fell upon her shoulder. This had been followed by pain in the left hypochondrium and later in the right lumbar region, the abdomen had been disturbed and there was some soreness at McBurney's point. Later there had been board-like rigidity of the abdominal muscles. The diagnosis had been traumatic appendicitis. In consequence of patient's having glycosuria and albumuria, she was not operated upon but was put upon starvation treatment. The temperature varied from 102° to 103° F. There was never any pain, although there was swelling the size of an apple in the right iliac region. Later, under local anesthesia an incision was made into the swelling, when a large amount of foul-smelling gas was liberated which caused Dr. Reid to suppose that he had perforated an intestine. When, however, he found pus at the bottom of the abscess cavity and the gangrenous stump of the appendix he concluded that he had a gas-producing infection. The question then arose: What micro-organism was present? He said that the reputation of the colon bacillus for marked variation, both in morphological appearance and biological characteristics, was well known but that the possibilities of an infection by the *Bacillus lactis aerogenes* was one which he had considered. Cultures made from the pus had in general resembled

those of the colon bacillus. In summing up, Dr. Reid said: (1) The case was one of long standing appendicitis, as shown by the history of pain in the side and digestive disturbances. (2) The history of traumatism was purely a coincidence. (3) The acute attack was caused by an infection of the *Bacillus coli communis* and followed by abscess formation. (4) The acute nephritis was caused by an infectious toxemia, as a postoperative examination of the urine proved the urine to be free from albumin and casts. (5) Associated diabetic condition which, on examination of the urine showed to still have continued months afterward, furnished a sufficient amount of sugar in the culture media contained in the abscess cavity for the production of gas formation. The question then followed: Was there a double infection of the *Bacillus coli communis* and *Bacillus lactis aerogenes*; or was the infection a single one of the colon bacillus which, under peculiar conditions of diabetic culture media, produced one of the involution forms which resulted in gas formation?

Neophroptosis.—Its Gynecological Importance.—This paper was read by Dr. A. H. Goelet, of New York, who said that the prolapse of the kidney has an important bearing upon gynecological conditions and that it is often overlooked as an etiological factor, both in producing and in maintaining congestion of the pelvic organs and diseased conditions coincident thereto, and in producing symptoms which are referred erroneously to the pelvic organs. This he had frequently observed in cases coming to him from other gynecologists. He pointed out that the kidney, when prolapsed, overlaps the ovarian vein, as it ascends along the spine, and compresses this vein, thus obstructing the return circulation from the pelvis when the waist is constricted by corset or clothing. It is not necessary, he said, that the constriction at the waist should be more than sufficient to support the clothing for the intestinal distention always associated with this condition is an important factor in forcing the kidney back against the spine. It might seem that, the kidney being movable, would escape such compression but the colon being attached to the kidney drags upon it when it is distended and holds it in position at the waist line, favorable for compression. The distended bowel must necessarily become displaced below the waist line since there is no room for it above. He said, also, that even in the early stages of prolapse, the kidney may retard the circulation of the ovarian vein, because, when the kidney descends, its lower pole swings inward toward the spine overlapping the vein. Compression and consequent obstruction of circulation of the ovarian vein may be brought about in another manner by a prolapsed kidney. The vein being in front and the ureter behind, where they cross, when the kidney descends the ureter becomes bent upon and drags on the vein. Distention of the ureter from accumulation of urine in consequence of obstruction at the point of flexure will also cause pressure on the ovarian vein. From these statements, he said that it would be seen that prolapse of the kidney is an important element in maintaining congestion of the pelvic organs and is to be regarded as a factor and a very important one in causing diseased conditions arising therefrom. He said, further, that it is certainly true that in most women having prolapse of the kidney there is some associated pelvic disease. The position of the kid-

ney may not always be the sole cause, but he considered it an important etiological factor in these conditions and when it is so, a cure is not possible without fixation of the kidney. This, he said, had been so frequently demonstrated that he was convinced that a prolapsed kidney has a strong influence in causing and maintaining such conditions as persistent leucorrhea, endometritis, uterine hemorrhage, uterine displacements and even ovaritis and salpingitis and hemorrhages into the pelvis, irritable bladder and cystitis. Gynecologists, Dr. Goelet said, should make a special point of recognizing this condition or excluding it in making diagnoses. This should be a matter of routine, to examine all patients for this purpose, not once but repeatedly, if necessary, until they shall be convinced of its presence or absence. Repeated examinations are necessary, he said, because the colon, when distended, is interposed between the kidney and the abdominal wall, acting like an air cushion, making it impossible to distinguish the kidney; therefore, distention of the colon must be dispelled before a satisfactory palpation may be made. The frequency of prolapse of the kidney is another reason for making this examination. In view of the fact that the kidney is an excretory organ and with knowledge that its function is seriously impaired by its prolapsed position, that it is so often disregarded, is a matter of surprise to the surgeon who constantly has opportunities to see good results from the operation for fixation of the prolapsed kidney. It is quite true, he said, that many patients exist for years with kidneys out of place, but they are chronic invalids and their kidneys are diseased, for a prolapsed kidney invariably becomes diseased eventually and chronic inflammation results in the pelvic organs when the return circulation is interfered with. He said that seventy-five per cent. of all patients with prolapsed kidneys have evidences of inflammation in three years, and that if others could see these kidneys as the surgeon does on the operating table, there would be less hesitancy in advising operation for correction and that the operation would be more often successful in affording relief as it might be done more frequently before the kidney had become incurably diseased. He said, in conclusion, that he had performed one hundred and ninety-seven consecutive nephropexies in forty-seven of which he had fixed both kidneys, and had had no deaths. Hence it could not be said to have any mortality rate.

Transillumination of the Stomach.—Dr. Robert Coleman Kemp reviewed the history of this method of diagnosis in diseased conditions in the stomach giving credit to Max Einhorn for first applying it to the living subject. He exhibited Einhorn's instrument and the one devised by Lockwood for this purpose and pointed out the disadvantages of both. He had improved upon the Lockwood instrument by adding to it an accessory cable, by means of which the electric bulb might be drawn up to any part of the stomach which had not been possible with the device as originally used. He had used, in a large series of cases three fluorescent media: (1) Quinine bisulphate, ten grains in a pint of water; (2) esculin; (3) fluorescein and sodium bicarbonate and fluorescein and lime water. The quinine solution became fluorescent only upon the addition of sulphuric acid. No deleterious results had occurred in his cases. He emphasized the importance of studying the motor function of the stomach in connection with trans-

illumination and said that these two procedures offered a more certain means of diagnosis in gastric dilatation, gastropotosis and tumors in the wall of the stomach than any other method. He said further that his experience had shown him that the normal stomach may vary greatly in capacity; in some individuals eight ounces being the normal capacity, while in others two quarts might be contained. As long as the motor and other functions are normal, the abnormal size of the stomach did not render it pathological. When the lesser curvature is in its normal relation to the diaphragm, the lower curve is at the umbilicus and the motor function is insufficient, there is a condition of dilatation. He demonstrated a method for supporting the dilated stomach, using for this purpose a wide strip of adhesive plaster, cut so that when applied, a straight edge extended across the abdomen at the level of the umbilicus, while the lower edge was so cut that an obtuse angle was directly in the middle of the front of the abdomen. This bandage was applied and was then reinforced by two additional strips applied over the first strip and extending around each side. This, he said, was not only a cheaper but a better method of support than the prepared abdominal belts of the dealers. He said, in closing, that, in attempting to outline the stomach by means of distention with air, the intestine was frequently distended also and that it might ride up over the lesser curvature of the stomach and thus disguise the real condition present. This was a difficulty which was of course not met with in the use of transillumination with fluorescent media and the modified Lockwood transilluminator.

A Substitute for Rubber Gloves.—Dr. Frederick H. Wiggin said that in consequence of the frequency of perforation of the rubber glove used by surgeons, a substitute was desirable, and he offered the following as a very satisfactory substitute:

R. Ether	℥ xlix
Alcohol (96 per cent.)	℥ xlix
Celloidin	℥ i
Castor oil	℥ ss

This, he said, when applied to the hands soon hardened and furnished protection equal to that of rubber gloves, was flexible and was not easily injured. It was, he said, not soluble in water or ordinary alcohol, but that it could be easily removed by strong alcohol and ether, equal parts. Moreover, it was cheaper than rubber gloves.

Salivary Calculi.—Dr. Herman Jarecky, of New York, said that Foster had reported one hundred and six cases of calculi in the salivary glands and ducts, and that forty-seven cases had been reported by other writers, but that while most of these cases had been those in which calculi had been found in Wharton's duct, and some had been cases found in Blandin's ducts, there was no record of a case in which calculi had been found in both of these ducts in the same patient. He reported three cases and exhibited the calculi which he had removed. In one of these cases he had removed stones from both Wharton's duct and Blandin's ducts. The stones, he said, were usually formed upon some nucleus of foreign matter, as toothpick ends or particles of food, and consisted of calcium carbonate or calcium phosphate. They had been removed by the use of local anesthesia, using simultaneously adrenalin, thus making a painless and bloodless operation. The calculi from Wharton's ducts were pear-shaped and those from Blandin's ducts were rod-shaped. He called attention to the importance of considering the possibility of a

salivary calculus in every case in which there was swelling in the submaxillary region. One of his cases had been diagnosed malignant disease, and had been treated accordingly by the X-rays.

Radical Operation for Carcinoma of the Breast.—

Dr. Willy Meyer, of New York, described the technic of this operation, as he has developed it. The main points in which it differs from the usual procedure, as proposed by Halstead, are the dissection of the diseased tissues from the clavicle and axilla downward and inward in the direction of the branching of the great vessels, thus making it possible to ligate the main vessels early during the course of the operation; the severing of the tendon of the pectoralis major muscle at the beginning; and the retention of the pectoralis minor muscle, to which the lower skin flap is stitched later. Dr. Meyer said that it has been proved that the pectoralis minor muscle is never involved in the carcinomatous process, therefore it is not necessary to remove it and that it helps, moreover, to fill in the inevitable gap left after removal of the breast. He said, further, that during his ten years' experience with this operation he had had only two deaths, and that neither of these had been due to the operation directly.

Prolonged Fasting in the Treatment of Acute Diseases.—

Dr. Norton Jerome Sands, of Port Chester, N. Y., read this paper. He said that during the course of acute diseases the digestive powers are in abeyance in proportion to the severity of the disease and that too frequently the patient is overfed. This, he said, aggravated the condition of the patient by setting up intestinal indigestion with resulting toxemia. During twenty-one years he has gone to the other extreme by withholding all food during the active stages of the acute diseases, giving only water. He reviewed his treatment of typhoid fever, saying that he withheld all food for twenty-one days, and, after thoroughly cleaning out of the bowel, he gave two quarts of water a day. His experience had shown him that there was no tympanites and no diarrhea, and that the temperature was usually two or three degrees lower than is common in typhoid. He had also found that the cold sponge was not necessary after the first week. After the third week he resumes liquid food, and he further said that contrary to the usual expectation the patient was not weakened by his prolonged fast, and that he even does not seem to be as weak as the patient who is fed in the customary way in typhoid. All other acute intestinal diseases he has treated similarly. Food, he said, is imperfectly digested during the course of all acute intestinal diseases, and that, therefore, feeding is irrational; it only adds to the gastrointestinal disturbance.

Dr. Wiggin, in the discussion, said that he had found that sepsis was a condition in which it was not advisable to feed the patient, and that he thought fasting was valuable in such conditions.

The Acetone Bodies in Diabetes.—Dr. Heinrich Stern, of New York, read a paper on this subject. He said that the problem present was how to cope with the acetonuria without aggravating the diabetes. In diabetes acetone substances are invariably expressive of a state of undernutrition. This may be, he said, occasioned by the one-sided diet which, of necessity, must be pursued in grave cases of diabetes. It will ensue, however, although probably somewhat later when the regimen exhibits abundant albuminous substances and immoderate amounts of carbohydrates. He dismissed the plan of giving oatmeal and butter as not only productive of discontent in the patient, but as not furnishing the required food substances, and advocated the abandonment of every other food and the administering

of the yolks of hen's eggs. The rationale of the *yolk cure*, he summed up as follows: (1) Palmitin, stearin and olein the fat substances of the yolk, occasion but small amounts of acetone bodies in the combination in which these fats exist in the yolk, they yield no butyric acid, or hardly any. (2) The large amount of lecithin supplied to the organism by the yolk tends to the restoration of the nerve forces and the amelioration of the cachectic condition. (3) The occurrence in the yolk of a diastatic ferment, assisting in the conversion of amyloid substances introduced by proteids and allowed vegetables. (4) Digestive secretion stimulating function of the yolk. From ten to forty yolks a day, and occasionally a small amount of proteid and non-avoidable carbohydrates, such as green vegetables, may be given, he said. He presented a case illustrating the benefit derived from this treatment, a boy in whom a previous acetonuria and glycosuria had entirely disappeared and who had gained considerably in weight.

Ocular Reflexes—their Influence on the General Health.—Dr. S. W. S. Toms, of Nyack, N. Y., said that conditions resulting from reflex irritation due to eye-strain, were often treated in vain by the general practitioner, and that the patient as a last resort went to the quack for relief. Slight astigmatism, he said, may produce hysterical or even more profound nervous conditions. The symptoms are frequently legion, but that headache, nausea, vertigo, symptomatic cardiac affection, night terrors or local conditions in the eye, such as hordeolum and conjunctivitis, were common. No accurate correction of abnormal conditions may be made without the use of a mydriatic, and he cited numerous cases in which serious general conditions had been removed by the correction of faulty eye conditions. One case of unusual interest was that of a spasmodic tic simulating chorea which had been removed by the correction of an exophoria.

An Epidemic of Mild Smallpox.—Dr. Edward Munson, of Medina, N. Y., reviewed an outbreak of what had been diagnosed at first as chickenpox, but which had been proved later to be true smallpox. Many of the cases were so slight that the patients had not even been confined to their houses. In connection with this he proposed, as a possible cause of the mildness of the disease, inherited immunity due to long-continued vaccination among the ancestors of the patients together with the modern hygienic conditions.

(To be Continued.)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirtieth Annual Meeting, held at Cincinnati, Ohio, October 11, 12 and 13, 1904.

The President, Hugh T. Patrick, M.D., of Chicago, in the Chair.

Prayer was offered by Rev. Chas. Frederick Goss, after which the Mayor of Cincinnati delivered an Address of Welcome, which was responded to by Dr. Dudley S. Reynolds, of Louisville.

The Scientific work was divided into two sections, Medical and Surgical.

PROCEEDINGS OF MEDICAL SECTION.

What Shall be Done with the Criminal Insane?—Dr. John Punton, of Kansas City, Mo., in a paper with this title, said that the conflict of authorities raging between law and medicine was responsible for much miscarriage of justice. A mutual conference to adjust differences of opinion and formulate conclusions relative to the medicolegal aspects of insanity in keeping with the more advanced state of medical knowledge, which

could be used as a criterion in courts of law, was greatly to be desired. The skilful manipulation of law, as now applied, often swept aside the entire medical aspect, even when guilt was admitted, and gross errors of justice resulted. The members of the American Psychological Association and the general medical profession were appealed to for their assistance in defining the mental condition which should exonerate a criminal from punishment. The wide difference of opinions prevalent in the public and professional minds relative to what constituted criminal responsibility of the insane rendered a consensus of medical opinion a necessity. Very few of the insane were wholly irresponsible for their misdeeds, and they should, therefore, incur, with certain restrictions, some form of punishment. In view of the degrees of responsibility associated with insanity, the just and equal disposition of the criminal insane became a question of the highest importance. The prevalent horror and disgust at the punishment of an insane person for criminal misconduct was a fallacy which should be condemned, as it often proved to be the responsible agent for the plea of immunity from punishment by murderers on the ground of insanity. The declaration of the law that the insane man was wholly irresponsible was a gross confession of weakness. Some courts recognized modified responsibility and instructed the jury to commit the insane criminal, if found guilty, to the State Insane Hospital until his recovery, when he shall again be set free, and this usually happened a very short time after punishment. The just or humane medical disposition of the criminally insane would seem to demand his incarceration in a special institution under medical surveillance and subject to certain restrictions suited to each case, and he should never be allowed to associate with innocent inmates of the State Hospital. A consensus of medical opinion on the vital important question above stated would tend to harmonize the present misunderstanding between law and medicine, and would thus aid in a more just and equitable disposition of the criminal insane.

Dr. A. Ravogli, of Cincinnati, in the discussion, deprecated the tendency to generalize too much in discussing the criminal insane. He reported a case in which an epileptic committed several murders before his insanity was recognized.

Dr. Charles W. Hitchcock, of Detroit, said this was a very delicate question for the medical profession to decide, and a case was reported, showing that justice might miscarry, even where there was an institution provided for the incarceration of those not responsible under the law.

Dr. G. Frank Lydston, of Chicago, disagreed with the previous speaker that this was a delicate question for the medical profession, and said that the entire subject of criminology should be relegated to the medical profession, so far as the physical conditions and remedies therefor were concerned. Many irresponsible individuals were punished. Punishment for crime had proven a distinct failure. Both sane and the insane criminals should be removed from our social system and isolated. The principal should be not punishment, but simply social self-defense. What should we do in regard to the propagation of the criminal insane? We had not yet come to the sterilization of these individuals, but undoubtedly would do so.

Dr. F. W. Langdon, of Cincinnati, said that, if the profession was given full power in this matter, it was questionable whether it would be able to draw the lines satisfactorily. The legal and medical professions had different points of view, and therefore their conclusions must vary. He agreed with Lydston as to the

punishment of the sane and insane. The physician should not arrogate to himself the fixing of the penalty that probably was never right.

Dr. B. F. Beebe, of Cincinnati, stated that the law had been coming to medicine on this question, because the prosecutors had been securing the assistance of medical men. Society must be protected, but the question was how and when and where to take care of the criminal insane. We must determine what constitutes responsibility or irresponsibility. While the laws of the various States did not agree, there was practical unanimity among those who had studied this subject from a medical standpoint.

Dr. Dudley S. Reynolds, of Louisville, spoke of the qualifications of the jury, requiring that they be not familiar with the facts and were not opposed to capital punishment. Such qualifications did not require that the jury be really competent to decide cases, and medical men were called in to testify as to the responsibility or irresponsibility of the defendant. Medical testimony was based not on an examination of the individual, as a rule, but upon hypothetical questions constructed by the legal gentlemen. The chief trouble was with the legislative conditions in the various States. Any person convicted of a felony should be unsexed rather than killed. No person in his right mind would commit a felony.

Dr. Sprague referred to the fact that the use of the asylum for the criminal insane was being rapidly extended throughout the country by the legal and medical professions. Often the attorneys for the prosecution and defense agreed to rest the matter of commitment or trial with the medical commission of such an institution. Such a reference would be more frequent if there were more assurance that such a medical commission was composed of really expert medical men.

Dr. Hitchcock, in explanation, stated that he did not regard this an indelicate question for physicians, but it was a very delicate question.

Dr. Lydston, in answer to a question, stated that sterilization could be effected by obliteration of the Fallopian tubes in the female, and by obliteration of the vas deferens in the male, without any effect upon the individual, save the arrest of the function of procreation.

Dr. Punton, in closing, said it was desirable to become able to have the court properly instruct the jury in these cases.

Loss of Consciousness and Automatism in Intoxication.—Dr. Thomas D. Crothers, of Hartford, Conn., said that the claims of no recollection or consciousness of events by inebriates indicated a paralysis of certain brain sections during which the victim might act automatically and be without consciousness of the real conditions. Histories of prominent cases confirmed this fact. Many startling crimes were committed in this condition. This was a new phase of irresponsibility which had not been recognized by the courts and only recently had been studied by physicians. The defense of no recollection might be a reality in some cases, and should be recognized by physicians.

Dr. B. F. Beebe, in the discussion, stated that the essential point was to prove the fact of the unconsciousness and the automatism. An idea could not exist if the brain cell was not in a condition to receive and retain an image. Whether unconsciousness was produced by alcohol or any other poison, the result was the same.

Dr. John Punton said that the medical profession ought to know the effects of alcohol upon the nerve

cells, but when this question came up in court there were as many opinions as there were doctors. It was not the individual's opinion the court asked for, but rather what definite knowledge there was and the consensus of opinion of the medical profession in reference to the question at issue.

Dr. Hugh T. Patrick said it was necessary to make a very fine distinction between alcoholic automatism and automatism in the alcoholic. In many degenerates or imperfects, there was a tendency to drink too much. The automatism and the drinking might be the result of a preexisting condition.

Dr. Crothers, in closing, stated his belief that individuals, such as he had described, should be regarded as insane.

General Streptococcus Infection of Intestinal Origin with Report of a Fatal Case.—Dr. G. W. McCaskey, of Fort Wayne, Ind., read a paper on this subject, in which he said that there were constantly in the respiratory, genito-urinary and digestive tracts large numbers of pathogenic germs, which might exist in any one of three states: (1) Actively virulent; (2) innocuous, but with conservation of virulence; (3) as a pure saprophyte. These pathogenic germs, which included streptococci, staphylococci, the colon bacillus, and many others might be transformed from the saprophytic to the virulent state by local or general morbid condition. In the case reported, a girl, aged twenty years, a severe chilling of the surface led to a general infection by the *Streptococcus pyogenes*, which apparently had its origin from the intestinal contents which were almost a pure culture of this organism. No other possible source of infection could be determined. The author drew the following conclusions: (1) The digestive tract frequently contains the *Streptococcus pyogenes* and other pyogenic or otherwise highly pathogenic organisms either in an actively virulent or asphytic state. (2) These organisms under certain favorable conditions might become enormously prolific with reestablishment or great increase of virulence. (3) Under such conditions the various toxins which these organisms produced are absorbed more or less freely from the intestinal tract, producing a more or less severe toxemia which disappears upon removal of the cause. (4) With local morbid alterations in the intestinal mucosa, these organisms may pass the intestinal wall in sufficient numbers and with sufficient virulence to produce a general infection of a serious or even fatal type. (5) The same result may follow functional disturbances caused by errors of diet, etc., leading to blood stasis and increased diapadesis.

Hereditary Predisposition in Tuberculosis.—Dr. Charles L. Mix, of Chicago, said that hereditary predisposition was usually defined as a specific predisposition toward tuberculosis. The nature of such predisposition was purely speculative. It was really a relic of the humoral pathologists, and existed today because of the difficulty of demonstrating actual infection. The argument in favor of hereditary predisposition was as follows: Tubercle bacilli were ubiquitous; every one was constantly breathing them in. Half of the people became tuberculous; half escaped. Half were, therefore, predisposed, and half were immune. The major premise was false, as shown by a table illustrating the number of individuals to each consumptive. The table explained the maximum incidence of tuberculosis at the ages of from twenty to thirty-five years. There were

many fallacies in the usual statistics tending to support the theory of hereditary predisposition. The reports of the numerous joint investigation committees proved nothing. The interpretation of the family cases of tuberculosis was often faulty; family cases showed infection just as much as hereditary predisposition. Hereditary predisposition implied hereditary immunity, but the latter apparently had no existence. The conclusion was reached that there was no such thing as specific hereditary predisposition.

Dr. G. W. McCaskey, in the discussion, agreed with the author that there was no such thing as a specific hereditary predisposition to tuberculosis. The important thing to remember was that tuberculosis was always an infection, and that no one could ever contract the disease unless infected. There was little doubt that every one living in a civilized community inhaled tubercle bacilli at one time or another, and with more or less frequency, the inoculations proving effective or otherwise, according to the local and constitutional states of the individual.

Dr. A. P. Buchman, of Fort Wayne, said that one did not invariably become tuberculous upon exposure to the tubercle bacillus; otherwise every one would be tuberculous. Often tubercle bacilli might be found in the absence of manifest tubercle infection.

Dr. Mix, in closing, said acquired predisposition existed, and the individual might also inherit a predisposition, not only to tuberculosis, but to any of the infections. There was no specific predisposition to tuberculosis, nor any other infection.

Treatment of Tuberculous Pleuritis.—Dr. James A. Burroughs, Asheville, N. C., referred to the use of intrapleural injections of nitrogen gas, and reported some cases in which he injected the pleural cavity with salt solution for the control of pulmonary hemorrhage in tuberculosis.

Dr. N. McKittrick, Burlington, Iowa, in the discussion, said that injections into the pleural cavity in the presence of diseased lungs and pleura, to compress the lung, was positively dangerous. The method did not merit much consideration in the statistics given by the essayist.

Dr. Carl Von Ruck, of Asheville, agreed with the previous speaker as to the dangers of pleural injection. In tuberculosis of the lungs, the cavities tended to work toward the pleural surface of the lung. To prevent rupture, nature caused a thickening of the pleural surface of the lung at that point. The injection of air or fluid into the pleural cavity to bring about the control of pulmonary hemorrhage through pressure required the breaking-up of the adhesions which nature had formed, in order to accomplish compression of the lung.

Dr. Burroughs, in closing, declared that the matter was still in an experimental stage.

The Obstetrical Significance of the Transverse Diameter of the Pelvis.—Dr. Joseph B. DeLee, Chicago, in a paper with this title enumerated the various kinds of pelvis, aside from spondylolisthetic and kyphotic pelvis, in which there was a diminished transverse diameter. These were especially the funnel-shaped, the assimilation, the masculine and the infantile pelvis. Various methods had been employed in making the diagnosis of lessened transverse diameter of the pelvis. The essayist presented an instrument for measuring the diameter of the pelvis. He believed the transverse diameter was not

infrequently reduced. In such cases there was frequently difficulty in delivery, especially in the passage of the shoulders and the extraction of the after-coming head. In treatment, the expectant method should not be tried too long. Frequently the forceps sufficed to effect delivery. Not infrequently symphyseotomy might be indicated. In breech cases delivery might often be facilitated by the application of forceps to the aftercoming head. Illustrative cases were reported.

Dr. Henry F. Lewis, of Chicago, said the contraction of the transverse diameter of the pelvic outlet was probably more frequent than was generally supposed. In these cases one should not delay the use of the forceps, which should be applied early. In cases of infection in the male type of pelvis, when the head had well advanced, if the forceps failed, symphysectomy was often an ideal operation.

Dr. DeLee, in closing, stated that in a breech case one was formerly instructed to put the forceps in the pocket. In such cases, one would now put the forceps on to boil. As a matter of fact, the forceps would fit the aftercoming head better than when the head presented. The exaggerated lithotomy position was sometimes of value. He reported a case in which an assistant performed tracheotomy on the child in a breech case. The child lived.

Hydrotherapy in Nervous Diseases.—Dr. Charles W. Hitchcock, of Detroit, Mich., described the effects of hydropathic applications, and showed that water might be made a promoter of elimination and a stimulant to all the vegetative processes. Properly applied, it was a powerful tonic. It might be an excitant, but it was also the finest sedative at our command. The author presented the practical advantages of the use of water in the treatment of neural and psychical cases.

The Treatment of the Morphine Habit.—Dr. Curran Pope, of Louisville, Ky., in a paper with this title, pointed out the peculiar state of mind of these patients and the necessity of appreciating it. A sympathetic understanding of the needs would facilitate treatment. Too much importance could not be attached to the condition of the excretory organs. Preliminary examinations were imperative in each case. There should be thorough and complete elimination before commencing the reduction of the drug, after which reduction might be painlessly carried to a certain point, and all shock avoided. All this time help should be given, not as a substitute, but in the shape of a neurocardiovascular support. When the drug was entirely removed, a substitute should be used, not hyoscine. The value of the non-medicinal treatment, such as massage, vibration, electricity, hydrotherapy, isolation and moral control, could not be overestimated in these cases. The value of after-treatment and the need of keeping in touch with the patients were a part of the system. Personality also entered a great deal into the question.

Dr. Frank P. Norbury, of Jacksonville, Ill., in the discussion, said he had not always had idealistic experience in the treatment of these cases. Recovery was not always smooth, and relapses were not infrequent. It was advisable to place these patients at rest in bed at once, and after perhaps two weeks the drug might be withdrawn. Often sodium bromide was useful as a substitute for the morphine, and cannabis indica was frequently of value as a stimulant. He reported a case in which the patient used heroin instead of morphine.

Dr. John Punton said the patient must be given to understand at the start that the physician should have his cooperation. The idiosyncrasies of patients to the drug differed, hence it was necessary to treat the patient. Hyoscine was a most valuable drug when properly used, but it was very dangerous when used promiscuously. The majority of physicians who came for treatment claimed they could not spend the time that was regarded as necessary to effect a cure.

Dr. Albert E. Sterne, of Indianapolis, agreed with the essayist in general, but did not think he laid sufficient stress on the reduction of the basis upon which the drug habit rested. One must take into account the fundamental nerve weakness. Even the physically strong might present nerve weakness. Habituation was not purely functional. There was a structural change in the nervous system, which supplied the physical basis for the condition. The use of drugs was to be deprecated. Many of the so-called abstinent symptoms were really not such symptoms. Often hyperacidity required treatment. Furthermore, every morphine habitué was a liar and absolutely untrustworthy concerning his condition.

Dr. T. B. Greenley, of Meadow Lawn, Ky., said that many morphine habitués were able to work and earn sufficient to pay for the drug consumed, and made barely a living, but could not afford to take proper treatment.

Dr. George P. Sprague, of Lexington, Ky., was surprised that the essayist did not begin at once the reduction of the drug, as there was every reason why it should be withdrawn immediately. The patient might be taken off the drug in from five to ten days, except in perhaps one case in twenty. Often the patient was sustained by a minute quantity of morphine. Some patients claimed that one-eighth of a grain was satisfactory, and the reduction to that point was not objected to by them. Often it was better not to stop the drug altogether until one had reached a decreased dosage of one-twentieth of a grain or less, until twenty-four hours could be passed without the drug, without unpleasant symptoms.

Dr. R. E. Haughton, of Richmond, Ind., regarded this condition as a practical toxemia affecting the cellular elements of the brain. After deciding upon the withdrawal of the drug, one must secure absolute control of the patient, in order to be successful in treatment. One must sustain the individual and at the same time secure elimination.

Dr. T. D. Crothers said a melancholic fact was the large percentage of the profession that were victims of morphine. The treatment employed must depend upon the individual. Psychotherapeutics and hydrotherapeutics were useful. Nerve rest was important. Drugs should be avoided.

Dr. Falk said that in prison practice he withdrew the drug from patients at once. The use of ergot, and the administration of elixir of chloral and bromide at night, he had found was not followed by any unpleasant results. None of the cases had been cured permanently.

Dr. B. F. Beebe said the removal of the drug in one week or ten days was too short. The patient should be built up as the drug was withdrawn. The medicine must be withdrawn; elimination should be as rapid as possible and the system built up.

Dr. Pope, in closing, insisted upon four to six weeks for the after treatment, because nutrition must be improved. Treatment during convalescence was

important. When the patient stopped treatment, he should be instructed to return at once if there were any unpleasant symptoms.

Effect of Direct and Indirect Violence Upon the Skull and Brain.—Dr. Albert E. Sterne, of Indianapolis, Ind., read a paper on this subject, in which he presented the following summary: "(1) Injuries of the skull and brain may be classed under two heads, those of impact, and those of momentum, either of which may be occasioned either directly or indirectly. (2) Injuries of impact, however extensive, offer a better immediate and remote prognosis, but must be treated with as little delay as possible, and almost always surgically. (3) Injuries of momentum show graver probabilities both in the immediate and remote effects. (4) In injuries of momentum lesions through *contrecoup* are more apt to occur, with extensive damage to brain structures and often without fracture of the skull, or external wound. (5) After trauma to the skull and brain, the immediate necessity is free drainage and avoidance of intracranial pressure. (6) The possibility of fracture should ever be kept in view after injuries to the head, and scalp wounds should, if necessary, be freely enlarged to determine the wisdom of further operative interference. (7) Progressive coma, after momentum injuries, is a strict indication for operation."

A Clinical Study of the Mental Disorders of Adolescence.—Dr. Frank P. Norbury, Jacksonville, Ill., discussed this subject under the following heads: (1) Adolescence presents a physiological study of contrasts revealed in (a) normal psychology of this period, (b) psychophysical symptomatology, and (c) pathological symptomatology. (2) Clinical groupings of symptoms leading to classification of the mental disorders of adolescence; dementia præcox, katatonia, hebephrenia, hysterical excitement, etc. (3) Clinical considerations of prognosis: (a) Evolution of mental disorders (b) recoveries, complete, partial; (c) terminal dementia. (4) Treatment: (a) prophylaxis; (b) immediate. (5) Conclusions: (a) The family physician must recognize early these important mental disorders; he must cooperate with the alienist in treatment; (b) prompt and energetic treatment is imperative; (c) prognosis should be guarded.

Insanity in Relation to Obstetrics and Gynecology.—Dr. Henry F. Lewis, of Chicago, contributed a paper with this title. He stated that various types of insanity might affect the pregnant or puerperal woman, or the woman suffering from pelvic disorder. There was no true puerperal insanity, however, as such. Normal pregnancy and even normal menstruation were not devoid of certain eccentricities of temper, tastes, appetites, or even morals. Some degree of mental instability must preexist if the eccentricities were to be exaggerated into insanity. The element of heredity was a potent factor, and could be traced in about three-fourths of the cases. Authorities differed as to the estimated frequency of obstetrical insanity. McLeod's figures gave a proportion of one case to 2,000 labors. Clouston found to per cent. of insane women at the Edinburgh Asylum were classified as having puerperal psychoses. Lane from observations in the Boston Insane Hospital for the past ten years concluded that insanity associated with childbirth occurred only half as often as insanity among all women of childbearing age. At best, one could only grant to childbearing an exciting causal relation in

the production of an outbreak of insanity. The predisposing instability of mind, often largely hereditary, awaited some awakening impulse in an acute physical or psychical disturbance. Such disturbance might be furnished by disorders of the genital organs in the performance of their normal functions. The relation of disease of the female genital organs to mental disease had long been recognized, but the intimacy of sex relation had been the subject of wide differences of opinion. A very large number of insane women were affected with pelvic disease. Evidence from autopsies and gynecological examinations of insane women by a large number of authorities showed the presence of noticeable pelvic disease in about twenty-five per cent. A considerable number of gynecologists had operated upon insane women at asylums for their genital lesions, and had secured a gratifying percentage of cures and instances of improvement. Hobbs, of London, Ont., observed over a thousand insane women and found pelvic disease of sufficient moment to justify operation on account of the pelvic disease itself in 25 per cent. of these women. All his examinations were made under the influence of an anesthetic, and suggestion was thereby eliminated. Ovarian lesions seemed to influence the mental state the most, uterine next, and vaginal the least. Neoplasms were the least prone to cause mental disorder of all the pathological conditions. Judging not alone from the work of Hobbs, it appeared that there was a much larger proportion of pelvic disease among insane women than among sane; that the pelvic disease had at least an exciting causal relation to the mental disease; that successful treatment, operative or otherwise, of the pelvic lesions would promise good results in the treatment of the mental disease. It was pretty generally agreed that some pathological basis must exist to justify operation.

Newer Conceptions of the Management of Bright's Disease.—Dr. Alfred C. Croftan, of Chicago, Ill., considered this disease as a cardio-vascular disorder of manifold origin, involving primarily the heart and arteries, secondarily those organs chiefly supplied by end arteries, namely, the brain, the retina, and the kidneys. The degeneration of the kidneys was, therefore, a very common and important, but not a determining feature of the disease. Bright's disease in early stages not infrequently occurred without renal involvement. Primary nephritis with the retention of excrementitious bodies might occasionally be a cause of the cardiovascular changes. This sequence of events, however, was relatively rare. The management of Bright's disease should be directed towards the prevention or removal of factors operative to affect the heart and arteries. The treatment of the nephritis was incidental, but important. The rest cure of the kidneys, diet (dangers of exclusive milk feeding), hygiene and medicinal treatment were discussed on the basis of the above conceptions.

Early Recognition of Important Eye Lesions by the Practitioner.—Dr. George F. Suker, of Akron, Ohio, pointed out the early diagnostic eye lesions in diabetes, chronic nephritis, and locomotor ataxia. Reference was made to the diagnostic conjunctival spot in cases of measles. He spoke of the frequency in mistaking glaucoma for trifacial neuralgia; also the frequency with which simple, chronic glaucoma was confounded with cataract. He emphasized the need of recognizing the eye conditions as a factor in chorea, functional epilepsy, neurasthenia and hysteria. The relation between gastro-intestinal derangements and

certain eye lesions was pointed out, and the need of a thorough ophthalmic examination in the neurotic, chlorotic and patients of this character emphasized.

Value of the X-Ray to the General Practitioner.—Dr. James E. Coleman, of Canton, Ill., stated that, as the practice of medicine was still largely in the hands of the general practitioner, it made it necessary for him to improve to the greatest extent his resources for diagnosing and combatting disease. X-ray apparatus had become a necessary adjunct. In order that it might be satisfactory, it must be first-class. Every general practitioner should have one text-book on X-ray therapy. The mastery of the details and technic was not difficult when studied, but success depended upon a knowledge of anatomy and proper interpretation of the screen and skiagraph. Cases were cited.

Macular Atrophy of the Skin.—Dr. Edward H. Shields, of Cincinnati, said that this rare disease was first described by Jaddason, in 1892. No other case reported. The author presented the following history of a case: Eighteen months ago red macular lesions were found on the legs and thighs, with no subjective symptoms. Some weeks later the patches lost redness, became softer, depressed, and the skin over the diseased area became shriveled; atrophy continued for several weeks, when the atrophic spot became soft and pale. Owing to the marked irritability of the skin, the atrophic lesions did not appear very pale immediately after the removal of the clothing, but after half an hour of absolute rest they became quite pale, resembling those of morphine. He stated that treatment was of little value, yet in due course of time the process was arrested.

Why So Many Errors in the Diagnosis of Graves's Disease?—Dr. J. H. Stealy, of Freeport, Ill., emphasized the importance of a correct nomenclature and its bearing on errors of diagnosis. He pointed out the illogical nature of the term exophthalmic goiter as applied to the symptom-complex of Graves's disease, and showed what a remarkably large number of cases of Graves's disease could be found if sought for. He discussed the percentage of symptoms, the diagnostic importance of each, and also the symptomatology.

Echinacea.—Dr. C. S. Chamberlin, of Cincinnati, made a plea for the recognition of echinacea as a valuable therapeutic agent. He gave a brief history and description of the drug, and referred to the suspicion with which the regular profession regarded remedies introduced by irregular practitioners, and their reluctance to investigate their merits. He cited brief reports of case illustrating the therapeutic value of the drug as an alterative and antiseptic, and its range of application.

The following papers were also read: Pseudo-membranous Croup, by Dr. R. E. Carlton, of Latonia, Ky.; Bacteriology and Immunity, What It Is, What It Teaches, What It Does Not Teach, by Dr. R. E. Houghton, of Richmond, Ind.; Two Etiological Factors in Pelvic Diseases in Women, Their Prevalence and Prevention, by Dr. J. H. Firestone, of Freeport, Ill.; Prognosis, by Dr. John M. Batten, of Downingtown, Pa.

(To be Continued.)

Japanese Sanitation in War.—If reports from Tokio and other Japanese base hospitals are to be depended on it would seem that the Japanese have learned the art of preventive medicine much better than any of their contemporaries. Typhoid and malaria are absent and the number of soldiers invalidated for medical disease has been less than one per cent. Surgical asepsis is also noticeable in the surgical wards. Few wounded have died of sepsis.

AMERICAN PEDIATRIC SOCIETY.

Sixteenth Annual Meeting at Detroit, Mich., May 30 and 31, and June 1.

FIRST DAY.—MONDAY, MAY 30.

The President, Augustus Caillé, M.D., in the chair.

Intussusception: Cure by Sloughing of the Intussusceptum.—The case of a baby, seven months old, was reported by Dr. Irving M. Snow, of Buffalo. After a duration of sixteen days' illness there were symptoms simulating ileocolitis, and a gangrenous intestine protruded from the anus. Recovery took place after six inches of the intestine which protruded from the sphincter had been taken off. Four similar cases were also reported in abstract by the same speaker.

Influence of Laboratory Feeding and Weight Index of Infants Suffering from Diseases of the Gastro-Intestinal Tract.—Dr. Maynard Ladd, of Boston, had studied the effects of laboratory feeding upon 216 infants with ileocolitis, fermental diarrhea and other diseases of the gastro-intestinal tract. These infants were under treatment of the clinic for periods varying from one to thirty-one weeks, and the average duration of illness was about seventeen days in the acute cases, while some of the chronic ones had continued for several months before coming under observation. The weight increase of each infant was used as an aid in estimating the effects of the method of feeding upon children of varying ages and stages of development. The infant's weight was taken at the beginning and at the end of treatment, and the ratio of this weight to that of the average normal infant obtained, the result being the *weight index*. More than half the cases under consideration had a weight development of only 40 to 70 per cent. of the normal, when they were first placed under observation. The author divided the results of his observations into four groups, as follows: The first group comprises those infants who made complete recovery from the acute gastric and intestinal symptoms, and whose weight index was maintained or augmented while they were being fed on laboratory milk. There were 109 cases in this group, or a little more than one half the entire number. There was a gain of eight per cent. for this entire group, and the greatest average gain per week was 156 grams reckoned from the lowest average gain attained during treatment. The second group included those infants who recovered from their symptoms and gained in weight, yet displayed a loss in weight index. There were fifty-eight cases in this group, and the greatest gain per week from the lowest weight attained was 94 grams. The infants in this group were not as long under treatment as those of the first group, the duration of treatment averaging only 5.9 weeks in comparison with an average of 8.5 weeks of treatment given to the infants in group one. The gain made in this second group was not great enough to keep up the weight indices, so that there was an average loss of 3.4 per cent. The third group is made up of those infants whose weight did not increase to any great extent, although in general they recovered from the acute symptoms, gastric and intestinal, for which they came under treatment. There were thirty-seven children included in this division. Eleven cases did not improve under treatment, and no further history has been obtainable in eight instances, so that there may have been a fatal outcome in some of them. The average loss in weight

in this group from the lowest point attained was 6.5 grams per week, and the loss in weight index 7.2 per cent. The average length of time under treatment was 3.7 weeks. The fourth group consists of the fatal cases, of which there were twelve, so that the average mortality for the whole number of cases under discussion was 5.6 per cent.

Disturbances Caused by the Employment of Large Fat Percentages in Infant Feeding.—It was the opinion of Dr. L. E. Holt, of New York, that very serious disturbances result from the administration of too great a percentage of fat in the milk selected for infant feeding, even by the most experienced physicians and nurses. A very rich milk, with a percentage of fat often reaching five or even 5.5 is often employed in the same manner as an ordinary four per cent. fat milk would be used, so that the formula may reach as high as six per cent. of fat, instead of 3.5 or four as was intended. The speaker reported some cases illustrating the effects of such errors, among which may be noted the sudden and severe character of the illness, enlargement of the liver, convulsions, laryngismus stridulus or tetany, and stools consisting almost of pure fat. There were also nervous symptoms which ceased when the quantity of fat was reduced and returned one week later, as soon as it was increased to the former amount. Another case observed developed slight rickets, evinced by delayed dentition and cranio-tabes, with convulsions, which returned after an interval of a week when the fat was again increased to almost its original strength. There was also constipation, so that the bowels had to be relieved by magnesia. It was the conclusion of the author that in those cases where there was any disturbance of digestion the best results were obtained by a lower percentage of fat and a greater one of proteids, and this is in a measure true of infant feeding in general.

Dr. Charles C. Kerley, of New York, had not obtained the results noted by the previous speaker and said that he was in the habit of reducing the amount of food administered until the temperature and the stools returned to normal. He then gave a weak formula, with only four or five per cent. of sugar and not more than one half of one per cent. fat. The children under six months old who had come under his observation in the New York Infant Asylum did well on milk containing only about two per cent. of fat, and seemed to be less liable to intestinal derangements.

It was the opinion of Dr. C. Freeman, of New York, that the working out of the weight index was the most striking feature of Dr. Ladd's paper. Concerning the subject of the second paper, it seemed to him that there was often much confusion in the minds of mothers and nurses as to what high fats consist in. Books on infant feeding often recommend cream, and it is added quite regardless of the fact that it may be 40 per cent. centrifugal cream instead of the ordinary 16 per cent. fat.

Dr. J. Lovett Morse, of Boston, called attention to the fact that eczema and ammoniacal urine often resulted from the administration of too much fat.

Dr. B. K. Rachford, of Cincinnati, desired to find out if auto-intoxication was the cause of the nervous symptoms often seen as a result of too much fat feeding.

It was the experience of Dr. L. E. LaFetra, of New York, that infants prematurely born, and

weighing from four to six pounds would often increase in weight with greater rapidity than children born at term, and would triple their birth weight at the end of the first year of life.

Dr. J. E. Winters, of New York, was of the opinion that it was often not too much fat in the food, but too much food which caused most of the intestinal disturbances under discussion. Infants were often rendered constipated because they were obliged to take far more food than they could well assimilate.

Dr. Holt thought that in cases of summer diarrheas infants were often kept too long from milk. In those cases where there was acute intoxication milk must be withheld until recovery was almost complete, but where there was simply intestinal indigestion resulting from dysenteric organisms it was not so imperative.

Case of Infant Congenital Hypertrophic Stenosis of the Pylorus.—This was reported by Dr. J. Dorning, of New York. A child weighing 8½ pounds was born March 23, 1903. The parents were healthy and labor was natural. The child was fed by the breast exclusively. It vomited after nursing, but the mother said she never noticed mucus in the vomit, that the milk was always returned fluid, and the child seemed to be able to retain water. The bowels moved two or three times a day, the stools being always yellow in color. The child slept very well, and grew tall, but the limbs were always very thin. The case was seen by Dr. Dorning on May 24. The infant was badly nourished, pale and listless, abdomen distended but not tender, soft and tympanitic. In the epigastric region, just to the right of the median line, a small mass was palpable. The child died on June 7, becoming unconscious while nursing and passing away in two hours. At autopsy the stomach was found to be distended, the pylorus hard and thick, and one inch beyond it the duodenum was deeply congested. There was no ulceration of the gastric mucous membrane, although it was pale in color. There was a decided thickening of the stomach wall in the region of the pylorus. Such a condition, the author said, had now been recorded in the literature about sixty times. A study of these records would lead one to conclude that there might be two distinct pathological conditions with clinical manifestations of a similar nature, one of which is surely fatal unless there is possible relief through operation, and another which may be relieved by proper dietetic measures. It is also possible that these are simply gradations of the same morbid condition. A palpable pylorus, intractable vomiting with no apparent cause and progressive wasting are the symptoms of hypertrophic stenosis of the pylorus. The gastric symptoms are often quite prominent in cases of moderate severity yet under dietetic treatment, may improve or even appear to cease entirely, especially in those cases where muscular spasm is a noticeable factor. If there is no bile in the vomitus, an obstruction above the entrance to the common bile duct might seem to be indicated, but if bile is present it does not necessarily exclude the diagnosis of pyloric stenosis. The diagnosis may be established beyond a reasonable question, however, as well as the symptoms before enumerated, if a palpable tumor is present in the pyloric region. As it is sometimes difficult to palpate very minute masses in the upper abdominal region, the use of anesthetics may often aid in disclosing the presence of a thickened pylorus

which could not be found by the palpating finger. If symptoms of pyloric obstruction are present there is always a strong suspicion of hypertrophic stenosis, for congenital pyloric stenosis displays practically the same ones, and other conditions are so rare in infancy that they may be practically ruled out. All cases do not have the immediately fatal termination of the one cited, and such children often live some time with symptoms of dyspepsia, more or less acutely manifest.

Renal Decapsulation as a Cure for Chronic Nephritis.—A case of chronic nephritis in a female child, four and a half years old, was reported by the President, Dr. Augustus Caillé. The urine contained renal elements, blood, casts, albumin and pus, was dark in color and scanty, fluid was present in the abdomen, and the eyes were puffy. She received hospital treatment consisting of diuretics and diaphoretics, with sweating and intestinal irrigation and was discharged much improved, but nine months later returned to the hospital, when the heart was found to be enlarged and general edema to be present. After a decapsulation of both kidneys had been done a typical chronic parenchymatous nephritis was found on both sides. Both kidneys were three times their normal size and over four inches in length. The patient made an uneventful recovery and there was no return of any of the previous difficulties. The author stated that in cases of this sort he would strongly advise inspection of the kidneys by lumbar incision, in the presence of a chronic nephritis which was not relieved within a reasonable time, that is, if no heart lesion was present. The hope of preventing an acute nephritis from becoming chronic would warrant splitting the capsule or decapsulating one or both kidneys, if they appear enlarged or swollen.

In reply to a question by Dr. Kerley, as to what effect such a procedure would have should these children contract scarlet fever or other infectious disease, the author said that as the procedure was a new one, little definite data had yet been gathered on these points. Many cases had been operated upon with marked benefit, as in the one reported, but the exact benefit conferred had yet to be determined, as to whether it was on account of increased blood supply or of the massage incident to the handling of the organ. But the results from the operations which he had seen were better than from those from medication.

Epidemic Vulvovaginitis in Infants and Children.

—A paper on this subject was presented by Dr. A. C. Cotton, of Chicago. An epidemic of gonococcus infection occurred in a hospital from August 1902 to September, 1903, and during this time 319 children were admitted. A urethral discharge was first noted in a boy two years old, on August 8, 1902. Next a girl suffering from typhoid fever was found to have a vulvovaginal discharge containing gonococci. The epidemic would seem to have arisen from these two patients. It was the opinion of the author that every children's hospital should take special precautions against such infection, by maintaining detention wards where new patients may be isolated for at least two weeks to insure their freedom from infectious disease, and should symptoms of any such acute infection develop there should also be completely isolated wards where the patient could be immediately removed, and placed in charge of special attendants who should have no duties in the general wards. The same care should be used

in the manipulation and treatment of a gonorrhea case that would be employed in regard to any other infection of an acute nature. Gonorrhea in a children's hospital was much to be dreaded, and female infants seemed to be exceptionally prone to contract it. Cases of a secondary involvement of the uterus or cervix, or a nephritis or pericarditis had been observed by Dr. Jacobi of New York, but in his opinion it was rather remarkable that undiapered children from two to four years of age did not more often carry infection to the eyelids.

In the Babies' Hospital, in New York, Dr. Kerley had seen some twenty cases of gonococcal arthritis in two years, and Dr. Jacobi had observed one case where a myositis was present.

Two cases of gonorrheal arthritis had been observed by Dr. L. E. LaFetra. In a baby three weeks old the source of infection appeared to be from the mother who had gonorrhea at the time of the child's birth. The second case was that of a child eight months old.

Dr. Caillé stated that at present every child admitted to the Post-Graduate Hospital in New York was thoroughly examined and a swab culture made, the child being refused if gonorrhea was found. This was done on account of the possible danger revealed by a suit brought against the hospital some years ago, when a child admitted in apparently good condition, ten days later developed a specific vulvovaginitis.

Acute Scarletinal Nephritis Simulated by Carbolic Acid Poisoning.

—The case of a child ten years old, who suffered from an attack of scarlet fever of moderate severity, was reported by Dr. S. S. Adams, of Washington. There were no alarming symptoms when he first saw the child on February 3, 1904. He instructed the mother to bathe her twice daily, using one teaspoonful of commercial carbolic acid to a quart of water, to allay the intense itching of which she complained. On visiting the patient ten days later very profuse desquamation had set in, the itching had been relieved by the carbolic acid baths, and there was apparently no tingling or irritation caused by them, so that the patient's condition was excellent. He received a report on February 22 that the child was in good condition, but had passed some dark urine, specimen of which he also received. This specimen contained granular casts, albumin, hyaline and red cells, and on visiting the patient her eyes were observed to be puffy. The baths being stopped the puffiness disappeared and the urine improved. It was Dr. Adams's conclusion that the patient had an idiosyncrasy against carbolic acid, as such a weak solution was employed, but he was satisfied from the urinalysis that the symptoms of nephritis were due to the carbolic and not to the toxic effects of the scarlatina, and the quick relief of the kidney irritation when the carbolic was stopped confirmed this.

Gastro-Intestinal Toxemia.—In the paper on this subject read by Dr. B. K. Rachford, of Cincinnati, the author drew a distinction between gastro-intestinal intoxication and auto-intoxication, inasmuch as the first was a systematic intoxication caused by poison formed and absorbed by the gastro-intestinal canal. The bacterial poisons produced in this canal way be caused by the components of dead bacteria, tuberculin for example, furnishing a certain amount of protein, by living bacteria excreting toxins or ferments, that can produce the most severe symptoms, or by substances produced by

the bacteria from the culture media. Ptomaines are the most important of this latter class. The great irritability and the immaturity of the nervous system of the child or infant would probably account for the greater incidence of acute intestinal toxemia in patients of that age. A quantity of poison easily thrown off by an adult might produce high fever, convulsions and other symptoms of a pronounced nervous type in young children. The fact that the hydrochloric acid function of the stomach is less developed in the child than in the adult may also account for the greater frequency of severe albuminous fermentations, which are able to produce virulent toxins, as the stomach is on that account less able to control and prevent intestinal fermentation.

The author wished especially to direct the attention of his audience to chronic intestinal toxemia, as he considered this a most important etiological factor in the production of nervous symptoms and one to which proper attention is not often directed. Even when constipation exists this form may be associated with diarrhea. The food material should not be retarded, and the feces when ejected should have the moist form of a normal movement, as it is thus hyperfermentation and increased absorption of the poisons in the intestines may be prevented. The author regarded intestinal intoxication as so important a factor in the production of nervous symptoms in children, that he nearly always began his treatment of such affections by making a thorough examination into the condition of the intestinal canal. He mentioned hyperesthesia, psychoses, nervous anxiety, hysterical and neurasthenic symptoms, bradycardia, general nervous irritability, fever, malaise, heightened reflexes and anemia as symptoms which might be produced or increased by intestinal toxemia. The presence of indican and the ethereal salts in the urine offered valuable clinical confirmation of the diagnosis. Because of the general tendency to attach so great importance to vegetable organism in the production of intestinal toxemia the part played by animal parasites is often overlooked.

Dr. Jacobi mentioned the eating of raw vegetables, as in Germany and other European countries, as likely to produce such symptoms, and also spoke of the practice of the old text-books in ascribing them to "worms." He had also thought that a protracted anemia might cause disturbances of digestion by creating an insufficiency of gastric and pancreatic juices.

It was the opinion of Dr. Forchheimer, of Chicago, that the finding of indican in the urine was unimportant. He spoke of the retention of feces being followed by diarrhea in children, and he drew particular attention to a condition he had already described, occurring more often in adults than in children, a chronic ulcerative stomatitis, taking the form of Riggs' disease in adults. In Riggs' disease he had always found uric acid and thought it caused by some auto-intoxication.

Dr. Rachford thought that the presence of indican in the urine bore a relationship to that of indol in the intestine, indol being one of the results of putrefaction and formed in the intestinal canal by hyperfermentation.

Fifty-One Cases of Acute Otitis in Children.—This series of cases was from the private practice of Dr. Charles G. Kerley, of New York, and was illustrated by several temperature charts.

SECOND DAY.—TUESDAY, MAY 31.

Nervous Exhaustion in Infants.—A paper was read by Dr. William P. Northrup, of New York, on several cases of nervous exhaustion in young infants which condition was the result of too great excitement from the attentions of admiring friends and relatives whose desire to "show off the baby" had often a most unfortunate effect upon the infant. He emphasized the necessity of quiet surroundings for young children, which are desirable particularly before and after the times of feeding, and called attention to the fact that injudicious attention on part of "grown-up people" is often responsible for nervous dyspepsia, sleeplessness and exhaustion in the overpetted baby.

Presidential Address.—Dr. Augustus Caillé chose for the subject of his presidential address the benefits conferred upon the children of America by the American Pediatric Society, and the objects toward which, in his opinion, the Society might well direct its future efforts. Among the points which he deemed especially worthy of the attention of pediatricians he mentioned the popular fear of "catching cold," which prevented many homes from receiving their proper share of fresh air. It is the duty of the physician to impress upon parents and those having children in their care the necessity of proper ventilation and temperature. The modern steam-heated dwelling was too often heated to a temperature far higher than it should be, and children living under such conditions are peculiarly liable to take cold. He recommended cold bathing and proper feeding with plenty of fresh air, as the surest method of combatting these tendencies. The duties of physicians in connection with disinfection after contagious diseases he regarded as most imperative, and often neglected or improperly performed. Infection is most easily conveyed among children, and such sources as the books of schools and libraries are all too often entirely neglected. Children recovering from such infections as diphtheria were compelled to stay indoors until all bacilli had disappeared from the throat, and they were thus deprived of the tonic effect of the fresh air which they greatly need. He regarded this practice as unreasonable and not founded on positive proof. He was also opposed to compelling the removal of children affected with the ordinary eruptive fevers to hospitals, as parents fearing this were in consequence impelled to conceal the existence of such diseases, and the danger of infection thereby greatly increased. He also made reference to the successful campaign which has been waged in favor of the medical inspection of public school children. The primary object of such inspection has been to detect the existence of contagious diseases, but its field of usefulness can still be vastly enlarged. It has already revealed many unsanitary conditions in all kinds of educational institutions, and has aided in the detection of skin lesions, parasites and so forth, but it should be extended to include a sort of hygienic guardianship of all school children. Children abnormal from any cause should be placed under the conditions demanded by their individual needs, and a great work lies before the physicians of America in aiding backward and neurotic children to advance under conditions suited to enable them to keep pace with normal children in perfect health. Such children should have separate class rooms and receive special care and instruction. The increased efficiency of the next generation would

more than repay the extra expense involved. In regard to children in good health it was the recommendation of the speaker that increased attention be given to the subject of the bodily training of school pupils, and he regarded the playground as being of equal importance with the school room. Personal cleanliness should be one of the first principles inculcated, the foundation of the education of every child, and too much attention could not well be devoted to it. Regarding children's hospitals, it was his opinion that the physician's duty was not to encourage the crowding of cases of minor ailments or chronic affections into such institutions. Hospital life was highly detrimental to a child. In the New York Post-Graduate Hospital regulations had been drawn up for the prevention of house infection in the babies' ward. They are as follows: (1) Strict cleanliness of premises and inmates; (2) thorough ventilation; (3) plenty of air-space; (4) no overcrowding of the wards; (5) feeding of infants by a different hand than that attending to the toilet; (6) immediate removal and disinfection of soiled linen; (7) the toning up of feeble children by a change of air, or a sojourn in the roof-garden or sunbeam playground.

The speaker then took up the consideration of the advances possible in the education of pediatricians. For undergraduate instruction he favored didactic lectures and bedside demonstration, and a strictly clinical basis for postgraduate work. The prominent features of a course in pediatrics should be dietotherapy and hydrotherapy, with physical diagnosis and laboratory work. His own plan of instruction for many years had been to devote two-thirds of the clinic hour to demonstration on a number of sick children so placed as to be readily accessible to the students, and the last part of the time to the discussion of important principles of treatment in the most common affections, or practical demonstration of such operations as tracheotomy, bowel irrigation, intubation or spinal puncture.

Summing up the suggestions made in the address Dr. Caillé offered the following set of headings, under which material might be gathered from year to year and presented in the transactions of the Society, thus making a running record of the world's progress in pediatrics. At each annual meeting the Council might appoint certain numbers who would be expected to furnish a critical review for the next meeting. The headings suggested were: (1) Home, school and hospital hygiene and prophylaxis. (2) Methods of teaching pediatrics. (3) Chemical, bacteriological and regional diagnosis. (4) General therapeutics, such as nutrition, diet, hydrotherapy, electrotherapy and phototherapy. (5) Surgical therapeutics, orthopedics and mechanotherapy.

(To be Continued.)

NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, June 23, 1904.

The President, Samuel Wolfe, M.D., in the Chair.

Bone Passed per Rectum.—Dr. Anna M. Reynolds exhibited a specimen of bone passed per rectum by a woman who six years before had fallen down stairs and struck her left side, it being six months thereafter before she felt all right; on physical examination, the lower rib on that side cannot be found and the specimen looks very much like a rib.

Case of Displaced Heart.—Dr. Harry Löwenburg exhibited a case of displaced heart, following pneumonia, occurring in a child whose father died of tuberculosis. The child has been somewhat weak since the age of nine years; when he had pneumonia, having also been treated for fracture of the scapula. The apex beat is located on the right side, in the position it should have occupied in the left. The skiagraph of the case was exhibited by Dr. Geo. E. Pfahler.

Syphilis Insontium.—Dr. Harry Löwenburg also exhibited a case of syphilis insontium occurring in a girl nine years of age, who, when first seen, had a pimple on the right thigh which proved to be an initial sore. General glandular enlargement followed, accompanied by primary eruption and other evidences of syphilis.

Dr. Alfred Hand, Jr., reported a case of tuberculosis of the right lung occurring in a little girl in which the heart has assumed the dextra position.

Dr. S. Leon Gans felt that it would be interesting to know whether the sore in Dr. Löwenburg's case was originally a chancre, or whether it was an abrasion of the skin which had been infected with syphilis.

This was followed by a

SYMPOSIUM ON SUMMER DIARRHEA OF CHILDREN.

The Etiology of Summer Diarrhea of Children.

Dr. Alfred Hand, Jr., read this paper. He stated that the disease was undoubtedly of infectious origin and that of the causative factors three stood out with striking weight: (1) summer-time, (2) infancy, and (3) bottle-feeding; the first being mainly dependent upon the delicate anatomic structure and immature physiologic functions. He stated that out of 636 cases of diarrhea in children from 1896 to 1902, in his dispensary service at the Children's Hospital, 12 per cent. occurred in May; 36 per cent. in June and 52 per cent. in July. The heat exerts its influence by lowering the resisting power of the individual and favoring the multiplication of bacteria in milk and water, which is particularly emphasized in large cities, due to the heat, stale atmosphere filled with dust and germs, and the age of the milk supply. He laid especially emphasis on the importance of cleanliness in the production and handling of the milk. He referred to the work of Shiga and Duval with the dysentery bacillus, the latter having demonstrated that out of 42 cases of summer diarrhea in infants, every one gave positive results as to the dysentery bacillus; and out of 20 cases in his wards at the Children's Hospital last summer, 12 gave positive results. He remarked that the bacillus had been isolated from water, and referred to the views of Knox and Newsholme as to the relationship between the drainage of the community and the number of cases of summer diarrhea.

Prevention of Summer Diarrheas.—This paper was read by Dr. Samuel McHamill, in which he considered as factors entering into the production of these conditions: (1) The atmospheric conditions—excessive heat, humidity and sudden fall in temperature, which act in two ways, first by increasing the bacterial contents of the milk, and second, by reducing the resisting power of the individual, the latter of which should be protected as much as possible by regulation of the clothing of the child, taking it to the country or keeping in shade, etc. (2) Defective conditions of hygiene rendering the food

liable to contamination and causing the child to suffer from lack of sufficient light and air, which should be remedied by keeping the child in the street or park, etc., as much as possible. (3) Defective conditions of the soil, resulting from dusty and torn up streets. (4) Lowered resistance from infections or nutritional disturbances, which should be guarded against by careful regulation of the diet, particularly as to digestibility, cleanliness and regular administration. He stated that mother's milk was the best food for the infant, and when cow's milk must be substituted, recommended that careful attention be paid to the sanitary and hygienic production thereof, as the toxic products in unclean milk can only be destroyed by a degree of heat which renders its nutritional value less. He also recommended careful attention to the nursing bottle which should be thoroughly cleansed after each nursing. Proper bathing should also be given careful attention, and water, always boiled, should be allowed freely but not within one and one-half hours from the preceding meal.

The Treatment of the Summer Diarrheas of Children.

Dr. H. Löwenburg read this paper. He considered under the following heads: (1) Prophylaxis, (2) Dietetic treatment, (3) mechanical treatment, (4) Medicinal treatment, (5) Serum treatment. Under the head of prophylaxis he regarded as the most important factors, summer heat and improper feeding. The sleeping apartments should be cool and well ventilated, and the bed covered with mosquito netting in order to prevent the contact of flies and influence of drafts. Cool bathing is also of value. The feeding of the infant should be at regular intervals, and, if possible, breast-fed; if not, pasteurized milk, if obtainable, or in the event this cannot be secured, the milk, as well as all water entering into its composition, should be boiled, the exact composition of the food to be governed by the particular case. Careful attention should also be given to the cleansing of the nipple and nursing bottle. As to the dietetic treatment, all milk should be discontinued, upon the beginning of an attack, for twenty-four to forty-eight hours, sterile water being administered at short fixed periods, preferably, if tolerated, albumin water, to which may be added expressed beef juice or brandy, and in severe cases the child must be maintained on nutrient enemata for twenty-four to forty-eight hours. The use of milk, preferably peptonized of slight strength should be gradually resumed and the strength increased. The mechanical treatment consists of lavage in cases of uncontrollable vomiting; colonic irrigation when incomplete emptying of, or combined with silver nitrate solution 1:1,000 when there is ulceration of the bowel; and hypodermoclysis in cases of cholera infantum during the stage of collapse following excessive purgation. The medical treatment consists of purgatives, such as castor oil and calomel, combined with intestinal irrigation in the fermental type of diarrhea; following this are administered the intestinal antiseptics consisting of salol, zinc sulphocarbonate and copper arsenic, which, however, have not been attended with success on account of the inability to administer them in large doses; and the intestinal astringents and sedatives such as morphia, bismuth and atropia. The serum treatment he stated was still in its experimental stage and referred to the paper read by Holt at the recent meeting of the American Medical Association.

Dr. James H. McKee, in the discussion, stated that there were a number of instances in which the streptococci had been found in milk, and referred to the work of Eskridge, Vaughan, Baginsky, Holt and Parke in this direction. As to the finding of the dysentery bacillus, he believed that there was no doubt of its presence in these cases, but the frequency varied considerably according to different observers. He stated that while he did not believe pasteurization or sterilization could replace a pure milk, these measures were of immense value, and also remarked that he had seen a number of cases of milk infection produced by pure milk. In the treatment of the cases, he recommended the withdrawal of all food and the administration of barley water for forty-eight hours, after which the resumption of milk should be gradual. In cases of fermentative diarrhea, he recommended the administration of calomel at first with castor oil later on, and the withholding of milk; in severe cases enterocolysis of normal salt solution were recommended. In these cases milk should not be resumed within forty-eight hours, but barley jelly may be administered on the third day, followed by animal broths.

Dr. Theodore LeBoutillier referred to the large amount of bacteria in the ordinary milk supply, and referred to the case of a patient who was taken with a slight attack of diarrhea which he attributed to the milk, which upon examination was shown to contain streptococci. In regard to pasteurization, he believed the home modification, if possible, to be carried out was better than the laboratory method.

Dr. W. H. Ruoff referred to the danger of producing diarrhea from bichloride of mercury formed by the giving of calomel followed by enemata of normal salt solution, and believed codeine to be preferable to morphine for a soothing effect.

Dr. William H. Good did not feel that if the calomel had not changed when passing through the gastric contents it would do so when it reached the sodium chloride as outlined by the last speaker.

Dr. H. Brooker Mills referred to the fact that he had observed the almost universal use abroad of a bottle with a long rubber tube, and that there was no more trouble there than in this country where we do away with the attachments.

Dr. McHamill, in closing, stated that sterilization should be used only as a temporary procedure, and that at the present time all ordinary milks were of such a character as to require pasteurization. He believed that if certified milk was used in winter we should be able to use it in summer without pasteurization. He remarked that the certified milk seemed to suffer more in March than any other month, which he attributed to the fact of the sudden changes of weather and insufficient icing to stand the same.

Dr. H. Löwenburg, in closing, stated that, while possibly pasteurization and sterilization might not be the best methods of destroying the organisms and modifying the toxins he felt they were the best available for the poorer classes. At the same time while it is recognized that both pasteurization and sterilization made some changes in the chemical character of the milk, rendering its digestion more difficult, it was highly probable that the bacterial disinfection was more helpful than the digestion modification was deleterious, and therefore these procedures represented minor ills. He did not believe there was any danger as suggested in the administration of calomel followed by saline enemata.

BOOK REVIEWS.

A SYSTEM OF PRACTICAL SURGERY. By Prof. E. VON BERGMANN, M.D., Prof. P. VON BRUNS, M.D. and Prof. J. VON MIKULICZ, M.D. Volume IV. Translated and edited by William T. Bull, M.D., Professor of Surgery, College of Physicians and Surgeons, Columbia University, New York; Edward Milton Foote, M.D., Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York; Carleton P. Flint, M.D., Instructor in Minor Surgery, College of Physicians and Surgeons, Columbia University, New York, and Walter Martin, M.D., Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York. Surgery of the Alimentary Tract. Lea Brothers & Company, New York and Philadelphia.

The list of contributors to this, the fourth, and in some respects the most important volume of von Bergmann's great system, comprises many illustrious names. Graser, v. Hacker, Kausch, Kehr, Körte, Lotheissen, v. Mikulicz, Schlange and Steinthal, are responsible for the original text which has been most ably translated and adopted for use in this country by the American editors. The latter have also expended much effort in enriching the already admirable collection of engravings and colored plates, so that in its present form the volume is undoubtedly one of the most beautifully and usefully illustrated books on surgery in existence.

The first section, by v. Hacker and Lotheissen, deals with the surgery of the esophagus and includes full information in a branch as yet but little developed in this country, viz., esophagoscopy. The technic of the procedure, together with the deductions to be made from its employment, are described at length and elucidated by a colored plate reproducing the pictures seen in the esophagoscope in various diseased conditions. The important subject of stricture in this region is also discussed at unusual length and the many methods of treatment devised by the ingenuity of different surgeons are well depicted and described. Steinthal contributes the section on the injuries and diseases of the abdominal wall, which is followed by a consideration of similar conditions in the peritoneum by Körte and a most suggestive section on laparotomy by v. Mikulicz and Kausch. It is interesting to note that ether is recommended as the anesthetic of choice, an indication of the changed point of view in regard to chloroform beginning to prevail abroad. Special anesthesia is relegated to exceptional cases. The same authors have written the chapters relating to the stomach and intestines which include some of Prof. Huntington's valuable plates on the development of the appendix. The section on hernia, by Graser, has also been much improved by the addition of new illustrations. The important subject of the liver and biliary passages has been allotted to Kehr, who has produced a most satisfactory abstract of the results of his wide experience. The detailed diagnostic table for the differentiation of lesions of this region should prove very helpful in practice. The authority of the succeeding section in the spleen is not stated and the volume closes with Körte's valuable chapters on the pancreas.

The surprisingly rapid appearance of the different volumes of this magnificent work indicates unusual energy on the part of all those concerned in its production and we congratulate them on the brilliancy of their performance.

THE DOCTOR'S LEISURE HOUR. By CHARLES WELLS MOULTON, General Editor. Arranged by PORTER DAVIS. M.D. Saalfeld Publishing Company, Akron, Ohio.

A WELL-BOUND, broad-margined book, inviting to the laity as well as to the profession, this first volume of "The Doctor's Recreation Series" comes to stimulate the risibilities and to rouse anticipation of the remainder of the series.

The book is divided into some thirty odd chapters with headings such as "The Patient," "The Doctor's Horse," etc., and grouped with admirable selection under each are humorous poems, anecdotes, and the innumerable and venerable jokes upon doctors, students, and weary patients; interspersed from time to time are appropriate chapters from well-known books such as MacLaren's "Doctor of the Old School."

As the preface states, the articles "are not confined to the funny side of physic but include many pages of weighty and instructive matter." This, however, being not more ponderous than selections from the reminiscences of Oliver Wendell Holmes, descriptions of medical life in the past, and some short essays, holds the attention even more satisfactorily than the poems and anecdotes, many of which having served long and faithfully in the cause, though dear to the heart and venerated for their hoary age, are nevertheless beyond the power of even the Fountain of Youth to rejuvenate.

Most of the matter is very entertaining, and all of it, both the new and the old, has point. It is delightful for a half hour after dinner and makes an able assistant in the waiting room. Principally it is unlike most collections of medical witticism in that it may safely be left on the office table within reach of "the Young Person." The one regrettable thing is the pictures, of which there are fortunately few, and it is to be hoped that in the succeeding volumes for recreation they will be omitted unless they pertain more strictly to the subject-matter.

BOOKS RECEIVED.

THE MEDICAL NEWS acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.

REGIONAL MINOR SURGERY. By Dr. G. G. Van Schaick. Second edition. 8vo, 228 pages. Illustrated. International Journal of Surgery.

PRINCIPLES OF HYGIENE. By Dr. H. Bergey. Second edition. 8vo, 536 pages. Illustrated. W. B. Saunders & Co., Philadelphia, New York and London.

KIRKE'S HANDBOOK OF PHYSIOLOGY. Revised by Dr. Frederick C. Busch. Fifth American Edition. 8vo, 862 pages. Illustrated. Wm. Wood & Co., New York.

TEXT-BOOK OF DISEASES OF WOMEN. By Dr. Chas. B. Penrose. Fifth edition. 8vo, 539 pages. Illustrated. W. B. Saunders & Co., Philadelphia, New York and London.

DISEASES OF THE SKIN. By Drs. J. N. Hyde and F. H. Montgomery. Seventh Edition. 8vo, 938 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

MEDICAL AND SURGICAL REPORT OF THE PRESBYTERIAN HOSPITAL, New York. Volume VI. Edited by Drs. Andrew J. McCosh and W. Gilman Thompson. 8vo, 331 pages. Illustrated.